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Perspectives on Nature: A Comparison of the Views of Thomas Jefferson and Henry David Thoreau

Stephanie Brewer Foley
College of William & Mary - Arts & Sciences

PERSPECTIVES ON NATURE:
A COMPARISON OF THE VIEWS OF
THOMAS JEFFERSON AND HENRY DAVID THOREAU

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Stephanie B. Talley
Author

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Thaddeus W. Tate
Thaddeus W. Tate

Chandos M. Brown
Chandos M. Brown

Carol Sheriff
Carol Sheriff

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ABSTRACT

The purpose of this study is to compare the development and impact of the philosophies of Thomas Jefferson and Henry David Thoreau in terms of their convictions about the natural world and one's relation to it. The findings suggest that, although the two scholars were influenced by different intellectual currents, they have more ideological similarities than previous scholarship has considered.

Theories concerning the value of land and how one should properly relate to it have undergone numerous changes in interpretation with the passage of time. Did nature exist exclusively to help individuals achieve economic prosperity or was there greater potential in the natural world for a deeper understanding and the existence of meaningful relationships? Was the ideal landscape an ordered, manicured one or one of naturally occurring patterns? What could man learn from studying nature's rhythms that might pertain to his own life processes? Were man and nature inextricably related? Did man have ethical obligations to the land as he did to other men? These were some of the issues that Jefferson and Thoreau contemplated during their ongoing dialogue with ideas.

The philosophies embodied in the Enlightenment and in Romanticism are examples of what have been traditionally viewed as varied interpretations of land use policies. Thomas Jefferson was a student of the Enlightenment; Henry Thoreau was more influenced by Romanticism. As an example of differing perspectives, the ideal natural world, during the Enlightenment, was most frequently seen in the context of well-designed gardens and productive fields. The Romantics generally preferred a landscape where less-structured, less-sculpted elements were allowed to predominate. In addition, Enlightenment scholars commonly perceived the earth through a more reasoned, intellectual approach; whereas Romantics more readily accepted emotional and personal connections.

Jefferson and Thoreau contributed extensively to the field of natural history, providing detailed analyses of nature's phenomena and theories of how best to utilize nature to its best advantage. Despite coming from different personal and intellectual backgrounds, both men saw nature as a provider, a teacher, and a friend. Both had great respect for the environment, and both believed that man had an obligation not to abuse the land. For them, thoughtful cultivation and sustained interaction with the natural world created favorable conditions for personal liberation and a distinct, secure republic, as well as for physically healthy and morally sound individuals.

PERSPECTIVES ON NATURE:

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INTRODUCTION

Throughout America's history, the mysteries of the natural world have piqued the curiosity of shrewd, insightful, and questioning men and women. As long as agricultural knowledge has existed, mankind has tilled the soil to produce items for food, shelter, and clothing. At first, he took only what he needed to survive. However, it soon became evident that the earth's raw materials were economically valuable, and eventually production and trade practices increased. The land which produced these marketable commodities quickly developed into a standard measure of personal wealth and social status.

Theories concerning the value of the land and how one should properly relate to it have undergone numerous changes in interpretation with the passage of time. Each century or generation has had its own idea of how the land should be cultivated -- how to prepare it, improve it, and nurture it. Is nature a collection of limitless resources and commodities to be conquered, then exploited for man's purposes? Or is nature something fragile, something beautiful to be worshipped and not abused? Are humans and nature inextricably related? And, if so, does mankind, as Aldo Leopold suggested in the mid-twentieth century, have similar ethical obligations to the land as he does to other men?[1]

The immediate goal of the earliest American colonists was to cultivate the land and become wealthy through trade. These pioneers viewed nature almost exclusively in a utilitarian way; the land existed to help them prosper financially. Yet nature itself was at the same time a help and a hindrance to the settler's proposed development. The existence of this dichotomy underscored the apparent necessity of subduing and ordering nature to promote the intended production. The idea of an uncultivated wilderness was entrenched in the seventeenth and early eighteenth-century intelligence as a sign of God's displeasure.

Based on the work of respected naturalists, including the Frenchman Comte de Buffon, America was frequently described as an impressive example of this vast and dreaded wilderness.[2] America's large amount of undeveloped and unfertile land, combined with accounts of weaker, smaller animals and horrid environmental conditions, frightened or repulsed many travellers and would-be settlers. But this so-called "hostile" natural world also signalled positive and infinite opportunities to many others who were less skeptical and more daring. To the adventurous, that existing natural disorder provided a challenge. The chaotic environment could be altered to make the land more useful for man's purposes, less threatening, and more beautiful.

Images of renewal and praise of improved nature were frequently invoked in written and oral descriptions of the

foundations of the New World.[3] The ideal landscape, in the seventeenth and eighteenth centuries, was believed to be a pastoral one which blended the two extremes of wilderness and ordered civilization or culture -- with a definite emphasis on the latter. The pastoral ideal stressed simplicity, fertility, and peace, while maintaining a relaxed productivity.[4]

A hope existed among early settlers that American agricultural production could be more impressive than anything that man had previously known. A symbolic and emotional connection developed between the potential of this blossoming countryside and a strong new political organization; that connection, combined with continued condescension from the Old World to the New, heightened American nationalism -- most noticeably during the second half of the eighteenth century. A majority of the colonists were thrilled to be separated from what they believed to be the uncontrollable confusion and deterioration of Europe, although they admittedly retained some of the abhorrent practices they claimed they were discarding. American land--fresh, unspoiled, and accessible--waited for enthusiastic and virtuous pioneers to transform and develop it into another Eden.[5]

The great eighteenth-century philosopher Montesquieu eloquently praised the American colonists for their industry and for their attempts to create a more hospitable atmosphere in which to live. He stressed that man **should** strive to

improve and cultivate the land, not just passively live on it.[6] Even the Comte de Buffon, whose writing often spoke of the New World's inferiority, agreed that the colonists' efforts to manage the environment had been somewhat positive and successful. He anticipated a time when America, with continued guidance, would be fertile and economically prosperous.[7]

Starting in the eighteenth century and becoming more pronounced in the nineteenth century, as the volume of commerce, manufacturing, and industry expanded, the intensity of man's concern for the welfare of the natural world also increased. Man began to reminisce about what nature had been like before the impact of his presence and his seemingly insatiable greed. Throughout the eighteenth century, man began to focus more attention on the possibility and repercussions of the abuse and deterioration of the natural world. A protective, paternalistic attitude ensued. New attitudes, which continued to develop into the nineteenth century, permitted emotional feelings toward the environment. No longer was it considered frivolous or shallow to experience passionate pleasure in nature. A long walk could provide and stimulate one's personal enjoyment; it was not merely an emotionless necessity to maintain one's health.

The Enlightenment in the seventeenth and eighteenth centuries and Romanticism in the eighteenth and first half of the nineteenth century are excellent examples of what have

been traditionally viewed by a great many historians as varied interpretations of land use policies--if not complete opposites. The latter part of the eighteenth century produced Thomas Jefferson--a child of the Enlightenment and a self-proclaimed lover of the earth. The Romantic and Transcendental movements of the nineteenth century provided the opportunity for another student of nature, Henry David Thoreau, to express his opinions. How did these men, two of the greatest thinkers and scholars of their times, view man's relation to the natural world? This discussion will address that issue as it examines the development and impact of the philosophies of Jefferson and Thoreau; the thesis will suggest that there were more ideological similarities between these two men than previous scholarship has considered.

The terms "Enlightenment" and "Romanticism" resist definition, but we can determine general trends in and implications of the two currents of intellectual thought. This paper is in no way attempting to provide a full and detailed discussion of either of these two complex movements--only a framework. During the Enlightenment, intellectual approaches toward most areas of study tended to have a scientific origin, and the observation and uses of nature were no exceptions. Enlightenment ideas spoke of an intelligible universe, of the ability to make clear moral judgments based on God-given powers of reason, and both material and

intellectual progress. In general, those who supported Enlightenment ideology wanted to understand and control natural processes--first by establishing a set of governing natural laws, such as Sir Isaac Newton had presented on the subject of gravity in his Principia Mathematica (1687) and as Carolus Linnaeus had on plant and animal classification methodology in Systema Naturae (1735). Then man could apply his understanding of those laws to control nature's wild and unpredictable state and replace it with a more comprehensible, useable one.[8] The idea that the universe functioned according to natural laws was extended to apply to all aspects of human existence.[9] Once man had learned and begun to apply nature's laws to his own actions, they believed, one's progress was assured. The individual, nature and ultimately society were perfectible. The ultimate goal of scientific study was the triumph of reason and the attainment of knowledge and happiness.[10]

During the Enlightenment, the natural world was most frequently seen in the context of ordered gardens and productive fields. Nature was seldom admired solely for its naturally occurring beauty. Sir Isaac Newton's laws proclaimed that all the earth was a collection of particles and, therefore, was passive and inert.[11] Nature was not alive and so was obviously not capable of cultivating any sort of reciprocal relationship with mankind. This denial of the possibility of any emotional or spiritual interactions between

individuals and nature meant that, for many eighteenth-century people, nature was accessible only to the intellect. Nature was often seen as a vast area of lifeless resources waiting for taming and use; technological and scientific developments would discover the means to extract these hidden resources and realize a profit.

Thomas Jefferson was a traditional eighteenth-century man in the sense that he had a great knowledge in many areas: politics, foreign languages, an education in the classics, agriculture, architecture, and, of course, science. Biographer Dumas Malone, in fact, called Jefferson an "almost perfect embodiment" of the Enlightenment.[12] Jefferson maintained that his temperament was best suited to be a scientist, but that fate had turned his life's course to politics.[13] Sir Isaac Newton was one of the three men, along with John Locke and Francis Bacon, whose written work Jefferson admired most intensely. Not surprisingly, then, Jefferson believed in natural laws and the application of their principles to non-scientific areas, such as politics, government, and personal life.

Like many of his contemporaries, he also had a great desire to impose order on the natural world. Virginia, and in particular the land surrounding his home of Monticello, would be the starting point and model for the new Eden in the rest of the country. He encouraged exploration, development and cultivation of the land but not to the extent of damage or

exploitation. For Jefferson, participation in an agrarian society was not just a method of accumulating wealth; it was the way to ensure prosperity and progress on a national level, as well as a personal one.

Jefferson shared a widely-held Enlightenment aesthetic of nature that, like Romanticism, had its own sense of the sublime. This concept maintained an appreciation of ordered, organized gardens and well-managed, cultivated fields. Jefferson was in some ways a pastoralist, albeit a refined one, whereas Thoreau rejected pastoral values almost explicitly. These cultured gardens, however balanced and trimmed, were aesthetically pleasing to some of Jefferson's contemporaries and were not devoid of pleasure for them. In addition, Jefferson found further emotional connections to and pleasures in nature. He perceived nature as being more active and animated than did many other Enlightenment scholars.

Romanticism, like the Enlightenment, had faith in man's perfectibility but viewed this perfection as the result of a much less ordered chain of events than most enlightened philosophes suggested. The Romantics, in general, believed that science and reason were limited in their ability to explain the universe and any natural laws. Their movement began as a reaction against the rigidity of the scientifically-oriented universe of the Enlightenment. They believed that science was important for its ability to ascertain nature's processes and learn from them. Nature was

viewed as a copartner with man--of equal if not more importance than he--not chiefly a deposit of endless resources. The Romantics no longer considered it necessary to "conquer" and exploit the natural world to be successful.

The students of Romanticism commonly shared great interest in the mysterious, the secluded, and the primitive. They believed that individuals should limit their interactions with civilization so as to maintain their health and so as not to be corrupted. They pointed to less-developed cultures (Indian people, for example) whom, they said, had not been contaminated with progress and, therefore, led a purer and better existence. The followers of Romanticism viewed the workings of the universe with great awe. This approach led to a great openness toward emotional interactions with the natural world and support of a less-structured, less-sculpted landscape.[14] (Granted, there were some writers prior to the Romantic period who praised the emotional reactions possible from viewing the wilder side of nature, such as Edmund Burke, William Bartram, Gilbert White, Reverend William Gilpin, and James Thomson, but these were exceptions. As evidenced by their work, there were undeniably proto-Romantic impulses during the eighteenth century. Indeed, the Enlightenment and Romantic attitudes toward nature merge in an intriguing and complex, yet almost complete, way in the ideas and conclusions of Jean Jacques Rousseau (1712-1778) and Johann Wolfgang von Goethe (1749-1832).)

Romantics studied the natural world through a holistic approach with a strong focus on the interrelatedness of all of nature. The Romantic universe concentrated not just on man's world but on all the parts of the earth where life existed. Humankind was a part of this functioning system and, therefore, should strive for a meaningful and reciprocal relationship with nature. Part of the Romantics' intellectual and emotional challenge was to attempt to resolve the existing conflicts between man and nature and between the mind and the world.[15]

Romantics were concerned not only with the relations of the self, society, and nature, but were also interested in reason, the conscious, the subconscious, and creativity.[16] These scholars were individualists, but all agreed that nature was alive and could stir emotions. William Wordsworth, one of the most respected Romantic writers, stated that within the forms of nature were included all the desires of men.[17] The ideological trend moved away from the intellectual formalism of the Enlightenment and toward allowing imagination to play some role. Man's imagination modified and humanized nature. Intuitive knowledge or faith could fill the void where reason failed. The mind had active powers; it was not simply a collector of sensations.

Living a simple life was a traditional Romantic commitment.[18] It allowed for the clearing away of material and political interferences to allow man's closest possible

relationship with nature. One no longer had to own a huge plantation to be considered cultured or civilized; a simple cottage and a willing heart were equally acceptable. And by living this simply, they claimed, they created the conditions that were ideal for uncovering the much-revered, moral order in nature. Most Romantics, in the beginning at least, did not disapprove of technological developments like the steam engine, increased expansion, or the railroad. At the time of their inception, there was no observable reason to be threatened.[19]

Transcendentalism was the most extreme expression of Romantic thought. This movement took its name from its belief in the existence of a reality that was above and beyond the limits of science and reason. Physically, man was rooted to the material world, but his soul and his imagination gave him the power to transcend beyond this world to seek out and realize spiritual truths. Supporters believed that the duty of man was to perfect his own unique self and let the rest of society take care of themselves. Above all, man must follow his own conscience. Their ultimate goal was the understanding of the greatest Romantic truth--the personal relationship of man to nature. The Transcendentalists stressed the idea that often things that were publicly accepted as important were not so much so when compared to the importance of one's inner spiritual life.

Thoreau, while unquestionably influenced by the Romantic

and Transcendental movements, grew to be more wary than many of his peers of technological improvements and was concerned about the possible encroachments of this development onto his ability to maintain a rapport with nature. He often looked to the future in his writings although he viewed it with little optimism. Thoreau was stimulated by the intense and ever-changing interrelationship between man and nature.

By living at Walden Pond for two years and by reducing his material and institutional needs to a minimum, Thoreau sought out the most primitive conditions of living to develop the most advanced spiritual existence. He said, in a now famous quote, "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach."[20]

Thomas Jefferson and Henry David Thoreau contributed extensively to the field of natural history, providing detailed descriptions and analyses of nature's phenomena and theories of how best to utilize nature to its best advantage. Each worked principally within the ideological framework of his respective era, yet each also explored beyond popular and established beliefs and boundaries. For example, however atypical the pastime might have been for the majority of Enlightenment scholars, Jefferson took time out from his structured scientific studies and traditional involvement with ordering of the landscape to enjoy the relaxation and

emotional beauty that uncultivated nature could provide. And Thoreau, although primarily focused on nature for emotional and artistic pleasures and as a moral guide, pursued scientific experiments concerning nature--an activity in which a great many other Romantics would not have been interested.

It is important to realize that any brief summary of one scholar's ideas is necessarily somewhat condensed. Also of note, in some instances, ironies and inconsistencies exist in Jefferson's and Thoreau's written or spoken work and their observable actions -- as indeed they do for many people. This does not and must not negate the power and intent with which these statements were originally put forth; they only serve to emphasize the complexity of these men and their continuing engagement in a dialogue with ideas.

Each man, to some degree or another, saw nature as man's provider, teacher, and friend. And in return for all that nature contributed to the human world, in philosophies which I believe foreshadow the idea of a land ethic, Jefferson and Thoreau both asserted that people had an obligation to be knowledgable and responsible in their dealings with the land. Individuals should be thankful of their relation to nature and make every effort to maintain positive interactions with the natural world.

Notes for Introduction

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2. Antonello Gerbi, The Dispute of the New World: The History of a Polemic, 1750-1900 (Pittsburgh: University of Pittsburgh Press, 1973), Part 1.

3. Roderick Nash, Wilderness and the American Mind (New Haven and London, Yale University Press, 1982), pp. 6, 33.

4. A more thorough discussion of the pastoral tradition can be found in A. Whitney Griswold, Farming and Democracy (New York: Yale University Press, 1952) and Leo Marx, The Machine in the Garden: Technology and the Pastoral Ideal in America (New York: Oxford University Press, 1964).

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8. Jane Bennett, Unthinking Faith and Enlightenment: Nature and the State in a Post-Hegelian Era (New York: New York University Press, 1987), p. 47.

9. Henry May, The Enlightenment in America (New York: Oxford University Press, 1976), p. 5.

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11. Samuel Levin, Metaphoric Worlds: Conceptions of a Romantic Nature (New Haven, Conn.: Yale University Press, 1988), p. 167.

12. Dumas Malone, Jefferson The Virginian (Boston: Little, Brown, and Company, 1948), p. 102.

13. TJ to Caspar Wistar, 21 June 1807, Thomas Jefferson, The Complete Works of Thomas Jefferson, ed. Andrew Lipscomb and Albert Bergh (Washington: The Thomas Jefferson Memorial Association, 1904), 11: 248.

14. Nash, Wilderness, pp. 46-47.

15. Morse Peckham, The Birth of Romanticism, 1790-1815 (Greenwood, Flor.: Penkevill Publishing Company, 1986), p. 266.

16. David Morse, Romanticism: A Structural Analysis (Totowa, New Jersey: Barnes and Noble Books, 1982), p. 7.

17. "Preface to Lyrical Ballads" in William Wordsworth, Selected Poems of Wordsworth, ed. George Meyer, (Arlington Heights, Ill.: Harlan Davidson, Inc., 1950), pp. 1-25.

18. Nash, Wilderness, p. 47, and David Shi, The Simple Life (New York: Oxford University Press, 1985), p. 125.

19. For a more detailed discussion of Romanticism, see Morse, Romanticism; Nash, Wilderness, esp. Chapter 3; Peckham, Birth; and Donald Worster, Nature's Economy (Cambridge, New York: Cambridge University Press, 1985).

20. Henry David Thoreau, Walden, and On the Duty of Civil Disobedience (New York: Harper and Row, 1965), p. 67.

CHAPTER I

THOMAS JEFFERSON

I. Nature as Provider

Jefferson's respect and admiration for nature's beauties and possibilities began at an early age as he listened to his father, a surveyor by trade, speak of charting the land to the west of the family's plantation at Shadwell. Jefferson also heard his father praise the fertility of the land and marvel at its economic and spiritual potential. With this background, Jefferson was not unlike a majority of Southerners with large land holdings; he viewed the land first and foremost as a provider. The land furnished items needed for man's subsistence and hopefully supplied more than the bare minimum so that material and cultural improvements could be accumulated and enjoyed.

Jefferson's property holdings were quite extensive, and he hoped to put them to good use. At the time of his father's death, young Jefferson received a substantial amount of land from the estate (over 5000 acres). He secured that much again from his wife's estate at her death. Acquiring these beautiful plantations can only have enhanced his sympathetic feelings toward the earth's prospects. Albemarle county hosted the largest farm of his Rivanna estates, Monticello--the continuous object of Jefferson's passion. Close to 500 of Monticello's acres (almost half the total) were cultivated;

the remainder were left to develop naturally and were predominantly tremendous groupings of oaks at various stages of growth.[1]

Jefferson was constantly experimenting with and developing all aspects of his farm. The grounds held a vegetable garden with over two hundred varieties of edible plants, an orchard for researching the successes of many types of fruits, a flower garden in which plants bloomed almost year round, a vineyard, and a greenhouse. The physical organization of this land fascinated him. He began preparing the top of his little mountain in 1768 by levelling it, but the full execution of his extensive garden plans could not take place until 1807 when the majority of his time in public service was completed. Prior to 1807, his landscaping consisted of essentials: building roads, clearing the land, and maintaining a working garden to provide food for Monticello's residents.

He envisioned an aesthetically pleasing final product, and his plans to realize that end included leaving some of the wilderness in the landscape. He suggested that, as time allowed, "the ground in general" be prepared in the following way:

> Thin the trees. Cut out stump and undergrowth. Remove old trees and other rubbish, except where they may look well. Cover the whole with grass. Intersperse jessamine, honeysuckle, sweetbriar, and even hardy flowers which may not require attention....Let it be an asylum for [the] wild animal....Court them to it, by laying food for them in proper places....Inscriptions in various places, on the bark of trees or metal plates,

> suited to the character or expression of the particular spot. Benches or seats of rock or turf.[2]

He also requested the introduction of shrubbery and trees at an early stage of the farm's growth. The starter plants were positioned in groups and thickets to create distinctive outlooks in all directions; these enchanting vistas continually awed visitors.

Jefferson's meticulous observations permitted him to consider <u>all</u> the details and diversity possible in his designs. In a letter to William Hamilton, Jefferson described the scene found at Monticello:

> Of prospect I have a rich profusion and offering itself at every point of the compass. Mountains distant and near, smooth and shaggy, single and in ridges, a little river hiding itself among the hills so as to shew in lagoons only, cultivated grounds under the eye and two small villages. To prevent a satiety of this is the principal difficulty. It may be successively offered, and in different positions through vistas, or which will be better between thickets so disposed as to serve as vistas, with the advantage of shifting the scene as you advance on your way.[3]

While touring in France and Italy, Jefferson wrote to his good friend, the Marquis de Lafayette, on 11 April 1787: "I am never satiated with rambling through the fields and farms, examining the culture and cultivators, with a degree of curiosity which makes some take me to be a fool, and others to be much wiser than I am."[4]

This attention to detail and its successive implementation brought Jefferson much praise. The Duc de la Rochefoucauld-Liancourt spoke of Jefferson's work during a June 1796 visit. He wrote: "A considerable number of

cultivated fields, houses, and barns, enliven and variegate the extensive landscape, still more embellished by the beautiful and diversified forms of mountains, in the whole chain of which not one resembles another.[5] The Duc complimented Jefferson's agricultural abilities, including his understanding of theoretical procedures and his amenability to observe their effectiveness and make any necessary changes.

One of Jefferson's goals was to develop Monticello's grounds into a botanical garden. To this end, a principal garden was carved from the southern-facing hill of the mountain and the total area was so great that it required the support of a stone wall, twelve feet high at its highest point. The finished garden was 80 feet wide and, at some points, 1000 feet long. The southern exposure created a warmed microclimate which prolonged the growing season. This positioning also helped to protect Jefferson's plantings from the same frosts which destroyed nearby crops. He repeatedly noted less damage to his fruit trees than to his neighbors'. Within the planting region, he specified particular beds to be used as nurseries, and he partitioned the area into various plots based on the nature of the intended harvest.

From the time Jefferson began writing entries in his Garden Book in 1766, he kept remarkably precise accounts of all the information he and his workers needed to cultivate the farm and gardens. Most of the records during the first year dealt with flowers; the next year he turned his attention more

to vegetables. He indicated, for example, how many beds he planted of a particular variety of seeds, what the dimensions of the bed were, and how far apart the rows were. The plantings were identified with numbered sticks placed in the beds, and the corresponding numbers and specific notes were written in the garden book. Whenever he was away, he sent communiqués to the farm's overseer Edmund Bacon on a regular basis. He provided him with detailed information necessary to keep the grounds in good order. It is one of the many ironies found in Jefferson's philosophies that he claims to have disliked the formality of the English garden so much and yet planned for and designed his own grounds so meticulously.

As the years passed, the records become more detailed and specific. In 1809, for the first time, he entered an incredibly extensive calendar of what was planted, where, the date it was sown, when they "came to table," when they stopped producing, and other observations such as special needs or methods employed, how great the yield, and if and when the plants were killed by frost. Jefferson hoped the details in these notes would help him produce better crops in future years and that, by sharing his knowledge with less-informed farmers, they too could improve their cultivation practices.

The farms Jefferson controlled in Albemarle county produced chiefly wheat and other grains for sale at market, whereas tobacco was the primary crop on the land he held to the southwest of Albemarle. He did not have an especially

good business sense concerning the management of his farms and, as a result, was often in debt. The crops he chose to focus on brought varying prices and were often lower than he had expected. Tobacco was unquestionably his chief money earner, but Jefferson disliked spending so heavily on its production. He believed that not only did the crop drain the soil of precious nutrients, but the work--both in terms of time and energy--needed to cultivate the plants was incredible, especially since it produced no harvest that could be used directly to clothe or feed the plantations' workers. He wanted to abandon his tobacco production entirely, as other Virginia planters were able to do, and shift his farms' focus to wheat. This he did successfully on his Albemarle lands but not elsewhere.[6] His debts were too pressing and the substantial income from the demanding crop was too important to lose. Attempting another approach, Jefferson also developed plans for the cultivation of cotton, but they never materialized.

Jefferson strongly stressed the worth of the land and believed that its ownership and productive use were intertwined by fate to form an ideal democratic state. He held that it was a man's right to have property and to work the land. This right existed through nature's order which preceded and predominated over any political, human structure for government. His personal draft of the Virginia state

constitution maintained the idea that anyone of legal age who did not own fifty acres of land should be given enough land to equal that amount.[7] Ultimately, however, the Virginia convention voted to reject this homestead provision. In a letter to James Madison, he observed:

> Whenever there is in any country, uncultivated lands and unemployed poor, it is clear that the laws of property have been so far extended as to violate natural right. The earth is given as a common stock for man to labour and live on....It is too soon yet in our country to say that every man who cannot find employment, but who can find uncultivated land, shall be at liberty to cultivate it, paying a moderate rent. But it is not too soon to provide by every means that as few [men] as possible shall be without a little portion of land. The small landholders are the most precious part of a state.[8]

Jefferson stated that property was the means, not the end, of obtaining freedom and maintaining a democracy.[9]

Jefferson's European travels made him more appreciative of land and its use in America. In Notes on the State of Virginia (1781), he compared European land cultivation to that in America. The land in Europe was undeniably fertile, but Europeans had to use the land cautiously, for there was a surplus of workers for a limited amount of land. Here in America, he said, the opposite phenomenon existed. He firmly believed that the value of America's lands doubled every twenty years and that American strength and virtue would be maintained as long as agriculture was the country's primary occupation.

Strongly based on his beliefs in the powers of the land, he held highly optimistic hopes for this new country. He

said, "Young as we are, and with such a country before us to fill with people and with happiness, we should point in that direction the whole generative force of nature, wasting none of it in efforts of mutual destruction."[10] He assured his countrymen in his First Inaugural Address that there was indeed plenty of land to provide "room enough for our descendants to the thousandth and thousandth generation."[11] That belief remained predominant in intellectual thought for almost a hundred years.

During Jefferson's presidency, due in great part to governmental income from the sale of public lands, he nearly paid off the budget deficit of the United States. Had this happened he would have realized as an actuality his belief that a country's debt should be paid off within one generation. In any case, the money collected from the sale of American land had helped America make good on a majority of its debts and maintain its integrity. This occurrence further strengthened Jefferson's confidence in the inherent goodness and value of the natural world.

The Enlightenment faith in science to provide methods of perfecting and ordering nature was visible in several of Jefferson's contributions to land cultivation. Jefferson received great pleasure from agricultural experimentation, not only because of the statement it made about his intelligence and ingenuity but also because of the aid his improvements provided the uneducated and uninformed farmer. Jefferson held

that a sort of "social contract" existed between the owner and his land. Man had a responsibility to improve his holdings to the best of his abilities or he should lose his right to own the land. To this end, Jefferson was instrumental in establishing various agricultural societies for the purpose of sharing important information on inventions and new agricultural practices.

Perhaps his best known contribution was the introduction of a moldboard with the "least soil resistance." (A moldboard is the curved plate on the front of a plow which turns over the furrow cut.) The idea for this invention first presented itself while he was travelling in the Rhine region in France in 1788 and observed the farmers struggling with their ox plows.[12] His moldboard dug the soil deeper and turned it more completely than previous models, and the construction was simple enough for most farmers to be able to produce themselves. Jefferson's idea, when made public in the United States, England, and France, won him acclaim and spurred increased attention on the subject of plow improvement elsewhere. In 1807 French authority declared Jefferson's moldboard "mathematically correct, and incapable of further improvement."[13]

He also invented a hemp-breaking machine and improved the functioning of the Scottish threshing machine. In a letter of 19 June 1796, he related to George Washington the progress of his work on the threshing machine:

> I have one of the Scottish threshing machines nearly finished. It is copied exactly from a model Mr. Pinckney sent me, only that I have put the whole works {except the horse wheel} into a single frame movable from one field to another on the two axles of a wagon. It will be ready in time for the harvest which is coming on, which will give it a full trial.[14]

He experimented with various types of spinning machines and introduced a seedbox for planting clover which reduced the cost of production from six to two shillings per acre. He was very much interested in the cotton gin and corresponded with Eli Whitney. He believed that such a machine could have considerable import for agriculture. Nature could become a better provider if man used his inherent intelligence to put science to work.

Jefferson encouraged the adoption of new methods of cultivation to his gardening enterprises and those of his countrymen, and he maintained an interest in introducing new varieties of plants and animals to America for experimental production. He imported rice from Egypt, Sumatra, and Piedmont. He successfully introduced a dry rice culture to South Carolina and Georgia. The main purpose for promoting dry rice crops, he said, was to "improve the living condition among the slaves and to save them from the ravages of disease to which the low countries were subjected."[15] Jefferson's extensive European tours introduced him to vineyards in the Loire Valley, Bordeaux, and Rhine regions, and he later helped to establish viniculture in Virginia. He brought in mulberry trees from China and Constantinople during the craze to

promote a silk culture. He was one of the first importers of Merino sheep from Spain which he bred with his own to improve his stock. From Italy, he acquired 500 olive trees (in 1773) and the Lombardy poplar. Of the olive tree, he wrote that it was one of the most precious "of all the gifts of heaven to man" because it added nutrients to the soil that helped to support other plants.[16] He said that without its presence that the area near the Alps could not support even half of the present inhabitants.

Jefferson also turned to the land as a potential, yet limited, producer and provider in the realm of natural resources. He said early Virginians had found their land to be rich in natural resources beyond all expectations. At the time of his writing Notes on the State of Virginia, he had made, among others, the following observations connected with continued and expanded use. (No writer before him had provided such a description of a state with such dignity and devotion.) Good stone "fit for the chisel" was plentiful, especially marble. Salt was plentiful and was successfully mined in the country west of the Alleghenies. Clay was available to make brick. Lead was also mined in Montgomery county with the aid of gunpowder. And some medicinal springs were scattered across the country.[17] He encouraged the development of his country's plentiful resources, but preferred sending its raw materials to Europe for manufacture and production to avoid American participation in what he

considered the great evils of unrestricted and increasing industrialization and urbanization.

As long as men could find work enough to do on the land, Jefferson encouraged them to remain there. Only when that option was eliminated should a man turn to other occupations--preferably first to the sea, lastly to manufactures. He related a decreasing degree of morality to each of those successive jobs. He said, "We have new lands enough to employ an infinite number of people in their cultivation."[18]

However, since the time of his writing Notes, his belief that institutions and individuals should be flexible and open to change had persuaded him to alter his staunchly negative opinion of manufacturing. In Notes he had praised agriculture exclusively, but he later acknowledged that there had been some wonderful developments in manufacturing also. By at least 1805, although his heart was still with the farmer, he came to believe that manufacturing workers were no less moral than farmers.[19] He accepted manufacturing's presence in this country, however limited, as he deemed it expedient and impossible to avoid. He still could not respond to this profession with complete enthusiasm. But, as he matured, he came to believe that agriculture and manufacturing must learn to work together as best they could.

Jefferson eventually concluded that America's trade practice of maintaining so great a dependence on English manufacturing was unhealthy -- and more dangerous than America

participating in its own limited manufacturing. He believed this negative practice could be reversed with a less restrictive manufacturing policy. He conceded, "Barefaced attempts to make us accessories and tributaries to her...have generated in the country an universal spirit for manufacturing for ourselves, and reducing to a minimum the number of articles for which we are dependent on her."[20] As he further developed guidelines for this idea, he noted to John Jay:

> An equilibrium of agriculture, manufactures, and commerce, has certainly become essential to our independence. Manufactures, sufficient for our own consumption, of what we raise the raw material (and no more). Commerce, sufficient to carry the surplus produce of agriculture, beyond our own consumption, to a market for exchanging it for articles we cannot raise (and no more). These are the true limits of manufactures and commerce. To go beyond them is to increase our dependence on foreign nations, and our liability to war.[21]

Although he became convinced of the necessity of developing manufacturing as well as agriculture, he remained concerned about repercussions from unchecked development and from the burning materialism of younger generations of Americans. Once the process of expanded manufacturing had begun, though it was still carried on in a comparatively restricted manner to the productions of the latter half of the nineteenth century, developments quickly surpassed the level Jefferson considered controllable and, therefore, healthy.

Jefferson's embargo of 1808-1809 unwittingly proved to be a great and unplanned stimulus for the development of manufacturing. As the nineteenth century progressed, fewer

and fewer Americans were closely linked to the soil for their livelihood. The increasing improvements and availability of agricultural machines and knowledge, improved productivity, and depressed prices and wages, formed a new working class too great for the work needed on the land and led people away from the rural areas to seek more materially satisfying manufacturing and, later, industrial jobs.[22]

Throughout his life, agriculture remained the economic producer closest to nature and to Jefferson's soul. He honestly believed that America was best suited for economic security through agricultural production, based in great part on the country's abundance of rich land. Ultimately, he saw agriculture as productive and manufacturing as non productive. He wrote, "...to the labor of the husbandman a vast addition is made by the spontaneous energies of the earth on which it is employed: for one grain of wheat committed to the earth, she renders twenty, thirty, and even fifty fold, whereas to the labor of the manufacturer nothing is added."[23] Though he realized a certain amount of manufacturing was necessary for America's self sufficiency, Jefferson continually stressed the moral, economic, and professional fulfillment of working the land and supported manufactures only so much as they helped meet America's needs and maintained its strength and independence.

Not only was Jefferson perceptive enough to realize the

importance of nature's ability to provide for manufacturing interests, he was fascinated with the potential rewards of Western lands. The fact that Jefferson's home for some time sat farther west than did the homes of other prominent statesmen signalled not only his interest in the west but it also foreshadowed future trends of westward expansion and movement away from the congestion of the commercial coastal cities. Though he never visited the land west of the Appalachian mountains, he had many suggestions for its growth, uses, and governance. Certain scholars have even referred to Jefferson as "the single most important figure in the development of the American West."[24] (The farthest west Jefferson did travel was to Warm Springs, Virginia, late in life, to "take the waters" for medicinal reasons. This region was only 75 miles west of Monticello.)[25]

Jefferson believed the American western lands had great possibilities and could be explored and developed to increase and assure America's political, economic, and spiritual strength. As long as there was land available on the continent, Jefferson supported ordered and sensible expansion. He saw it as an extension of his agrarian republic. And he did not want the land west of the original thirteen states to become subordinate to them. The policy he advocated ultimately developed into one which allowed for the creation of new states with power equal to that of the original ones.[26]

Some of his contemporaries were afraid that a larger

America would become too large to govern comfortably. After all, the great philosopher Montesquieu had stated that a republic could not function if it was too large, and it was difficult to challenge his conclusions. James Madison, among others, **did** challenge Montesquieu, arguing that the Frenchman had confused his country with America and that the two were fundamentally different in character.[27] Expansion in America would strengthen this republic, not divide and hurt it.

Jefferson believed in thorough knowledge and good management of the western terrain in order to realize the benefits. He proposed a method of drawing the eastern and western lands together by connecting the economic prosperity of the West to that of the East. He supported a project for a waterway that would connect the West with Virginia and allow commercial goods and communication to travel directly across the mountains instead of down the Ohio or the Mississippi.[28] He was particularly interested in the utilization of the Potomac as an alternate route to that of the Mississippi, but his plan for the river's development was faulty and was never fulfilled.

In December of 1780, he delivered instructions to George Rogers Clark for a fact-finding excursion westward into the Ohio territory "the principal object of which is to be the reduction of the British port at Detroit and incidental to it the acquiring possession of Lake Erie,"[29] Unofficially, he also hoped to collect details about the land and its

potential. Jefferson showed his continued support of western expeditions in 1793 by writing the instructions for André Michaux's journey, funded by the American Philosophical Society; Michaux was to explore the country along the Missouri and west to the Pacific Ocean.[30]

Then, once Jefferson became President and realized the authority that position afforded him, in a confidential message to Congress in January of 1803, he presented his reasons for advocating another expedition to the west. The finding he received from Congress after this address went to support the well-known explorers Merriwether Lewis and William Clark. Jefferson remained optimistic that, along with scientific findings, the undiscovered and undoubtedly profitable Northwest Passage would be found. He believed that there was a possibility that the Missouri River could provide an ideal trade and transportation route to the Pacific Ocean.[31] He argued that the rapid increase of America's population called for extension of its territory. Presented publicly as a commercial mission, he proposed to send an "intelligent officer" with ten or more men to explore the land and establish amiable relations with the native Indians there.[32] Governmental cost would be minimal and, upon the adventurers' return, they would receive "a soldier's portion of land" for their efforts.[33] Land, of course, was the proper and ultimate Jeffersonian reward for work well done.

Jefferson's private goals for this expedition and his

instructions to Lewis and Clark are fundamental to understanding his attitude toward the West. The particular strength of the instructions was in their broadness and their omission of any strict limitations concerning data gathering for the explorers. Flexibility produced greater results. This event was the culmination of years of study, observation, and discussion and reflected Jefferson's evident anticipation in finally having facts, not just theories, about those western lands and their flora and fauna.

When Jefferson purchased the western lands of the Louisiana territory in 1803 -- undoubtedly his most famous land purchase -- the size of the United States doubled and the way was cleared for expanded settlement, trade, and safe navigation of the Mississippi River. During Jefferson's presentation to the 1803 Congress, called into session early to ratify this treaty, he noted the advantages of having "an independent outlet for the produce of the western States," on "the fertility of the country, its climate and extent," and on "its ample provision for our posterity."[34] (Jefferson was a pragmatist and it is therefore improbable that any amount of curiosity or anticipation about western lands and their potential could have enticed him to buy the land if its control had not just recently been transferred from a relatively complacent Spain to a more powerful and threatening France.)

In actuality, though Jefferson may have sounded confident

during his congressional exposition, the information he had to submit to these officials about the region was sketchy and inadequate. Even he knew little of what he was buying. He stated that in this case he was not afraid of the unknown and viewed the move as an assurance of the continued health and growth of his agrarian republic.[35] When the property was transferred from France, the precise southwestern boundaries of the area were unclear. Some scholars suggest that this was a deliberate attempt on Napoleon's part to create conflict between Spain and the United States.[36] Jefferson immediately began planning a series of expeditions with the goal of determining more detailed information about the boundaries, commercial potential, and natural history of this new acquisition. Toward this end, he secured funding in 1805 and 1806 for two information gathering journeys along the Red River and another two along the Mississippi.

Jefferson acknowledged that the Louisiana Purchase was beyond his constitutional rights, but he believed the risk of censure was worth it when he considered that the end result would provide America with a huge tract of valuable land ripe for additional cultivation. His position sounds a great deal like Thoreau's statement of civil disobedience; yes, following the written law was an important job of any citizen, but more important than that were the laws of necessity and self-preservation. He defended his actions frankly in a letter of 12 August 1803 to John Breckinridge:

> The constitution has made no provision for our holding foreign territory, still less for incorporating foreign nations into our Union. The Executive, in seizing the fugitive occurrence which so much advanced the good of their {the citizens'} country, have done an act beyond the Constitution....It is the case of a guardian, investing the money of his ward in purchasing an important adjacent territory; and saying to him when of age, I did this for your good; I pretend no right to bind you; you may disavow me, and I must get out of the scrape as I can: I thought it my duty to risk myself for you.[37]

The Louisiana tract fulfilled Jefferson's expectations that the western land would be of equal quality and value to the previously settled United States. That $15 million transaction and the subsequent addition of 900,000 square miles has been regarded by many scholars as the first great step in America's continental expansion.

Jefferson's westward expeditions, and particularly Lewis and Clark's efforts, helped answer many scientific and natural questions he had had. Although they did not find the long-awaited and hoped for Northwest Passage and although it was determined that the Missouri did not flow all the way to the Pacific Ocean, the body of knowledge of those western lands was greatly increased. Detailed maps were drawn, botanical samples were taken, and skeletal remains were unearthed and shipped back east for further study.

While Jefferson was still a young man, his father had transferred to him not only a reverence for the beauty of the land but also the conviction that aristocracy must have a strong sense of public responsibility. Less affluent and less

sophisticated men were just as worthy of respect as the rich and cultured. Landholdings did provide power, said Jefferson, both economically and politically, but that reality was not to be abused at the expense of the small landowner.

In an attempt to spread more land to more people, he advocated the abolition of entail and primogeniture in Virginia as well as the development of a personal system of land tenure.[38] Generally the Virginia aristocracy had a good record of fairness in these matters. Jefferson may have perceived a bigger problem than actually existed; in fact, some scholars believe that entail and primogeniture were not widely practiced at all.[39] But Jefferson feared that as long as the British-based, feudalistic laws remained in effect, it would not be too long before abuses became more standard.

Therefore, he believed, a sort of "social contract" existed between man and the land. The removal of the laws of entail would prevent the hoarding and perpetuation of wealth by a limited number of families. Jefferson stressed his desire that talented and hardworking members of society be given a chance to improve themselves and the land. Along this line, he supported squatter's rights, preferring that the land become theirs based on the hard work they had done rather than because of any monetary sums paid to the government by sometimes lazy, however wealthy, individuals. The eventual repeal of primogeniture and the idea of equal partition of inheritances among all sons removed the feudalistic laws which

allowed one man in each family to take everything, holding all the money while the remaining siblings were destined to become poor or struggle to establish their own fortune. Jefferson wanted America's land system to be based on one's ability and virtue, not just on inherited privilege.

Jefferson also disagreed with the practice of land speculation. After the Revolution, land speculation became more prevalent among Americans as members of the new state legislatures replaced former English speculators. He himself refused to purchase any huge tracts of western land for his personal gain although many other wealthy individuals did. The power and grass roots support afforded to members of the Senate allowed them to delay the ratification of the Articles of Confederation for three years.[40] Had they also been successful in defeating the measure against speculation, Jefferson feared the northwest territories would have been formed into huge feudal estates instead of what he believed to be the more ideal form of small land holdings.

Jefferson also believed man had a moral responsibility to the land itself, not just in one's dealings with other men. To this end, Jefferson was one of America's early soil conservationists, although he probably saw his actions as practical - rather than philosophical - measures taken to assure high production yields. Many of Jefferson's practices had long been in use by farmers in England, following numerous developments during the Agricultural Revolution of the mid-

sixteenth century to early eighteenth century. With a curious mind and an experimental urge, he looked for useable ideas everywhere. He especially praised crops like clover that allowed sections of his land to rest and renew themselves. He also supported crop rotation which, combined with the harvesting of legumes that restored nitrogen to the soil, the use of fertilizers (both manure and gypsum), the use of plastering (liming), and the process of deep plowing, helped to maintain the health of the soil.

He knew that over time the sun and the rain had the ability to rejuvenate the soil, but he still emphasized the essential presence of human help. To reduce soil erosion on hillside gardens, where the rows typically ran vertically, he utilized contour or horizontal plowing. He describes its use in a letter to Charles Willson Peale (17 April 1813):

> Our country is hilly, in oblique lines, or however they lead, and our soil was all rapidly running into the rivers. We now plough horizontally following the curvatures of the hills and hollows, on the dead level, however crooked the lines may be. Every furrow thus acts as a reservoir to receive and retain the waters, all of which go to the benefit of the growing plant....In a farm horizontally and deeply plowed, scarcely an ounce of soil is carried off from it. In point of beauty nothing can exceed that of the waving lines and rows winding along the face of the hills and vallies. The horses draw much easier....The improvement of our soil from this cause the last half dozen years, strikes everyone with wonder.[41]

In another intriguing exercise, turkeys roamed free through his tobacco fields as they indulged in and removed any worms from the plants.[42]

Bad farming practices abounded in Virginia, yet, in a

way, these owners had no real urgency to consider land conservation during Jefferson's lifetime. There was so much fertile land that it was often cheaper for them simply to relocate their farming operations to new land than to worry about maintaining the fertility of the original acreage. Jefferson, however, and several notable others like George Washington, supported a policy of taking care to renew existing useable land rather than cultivating it into sterility and then moving on. In support of this belief, Jefferson hinted at man's economic responsibilities to the land, and, however, subtly, at his ethical obligations too.

II. Nature as Teacher

Jefferson was also very interested in the land as a teacher. His comments in Notes, Garden Book, and Farm Book, to name a few, showed how intensely observant and thoughtful he was about the landscape. He noticed and learned from the most minute changes. His interests and writings show that he agreed with Charles Willson Peale who wrote to Jefferson that studying nature's various beauties could strengthen the mind and foster harmony and virtue in a most powerful way.[43]

Under the guidance of three men in particular, Jefferson collected and refined a body of interests which he believed to be important enough to pursue. Among these concerns was a

strong love of nature. These men all had contact with Jefferson during his formative years while he was in Williamsburg, Virginia; they were mathematician and natural philosopher William Small, colonial governor Francis Fauquier, and lawyer and classicist George Wythe. Small showed Jefferson what the mind was capable of and introduced him to Isaac Newton in a thorough way, helping the avid student to grasp the concept of an ordered universe. Fauquier proved himself to be a man of the Enlightenment not only through his scientific studies and thoughts, but also through his generous actions. Fauquier's observations of natural phenomena included a journal of weather for the town of Williamsburg. Jefferson later kept similar accounts. George Wythe, with his emphasis on mastery of Greek and Roman writings, helped enrich and democratize Jefferson's mind further still.[44]

Relatively early in his life, Jefferson began writing down and collecting observations he made of the natural world. For example, the Garden Book, begun in 1766, provided a collection of information on the varieties of flora and fauna he planted and their comparison to other similar species, whether in the United States or abroad. He discussed the times of planting, transplanting, maintenance, and harvest, as well as the first appearance of the plants and visiting animals each year. He also included diagrams of his flower and garden plantings and preferable soil and climatic conditions. In 1816, he requested that several specific bulbs

be sent to Poplar Forest, his second home, for attempted cultivation there. The ability of his Monticello gardeners to maintain a healthy landscape underscored the fact that Jefferson's gardening methods and innovations were sound and his land was prospering.

Jefferson was interested in recording these types of data in such detail so that the information could be shared with other farmers and cultivators. In this way, the producers, including himself, could continually review the data and learn from successes and failures of past years in order to realize more plentiful yields in the future. He hoped for the eventual development of a standardized system of data collection--statewide, nationwide, and beyond.[45] Jefferson himself followed the Linnaean system of plant classification, assigning orders, genre, and species. He desired a system where the naming processes could be easily committed to memory, where changes could be made simply to accommodate new discoveries, and where the greatest number of people possible could understand the system's use.

He overlooked nothing, whether in the straightforward observation of one object or in the possible connection between several. For example, in 1767 he recorded when strawberries were first served after having been planted the previous spring. He noted that, on average, each plant bore twenty berries, 100 of which filled half a pint. Later, in a 1768 entry, he mentioned with similar precision the number of

peas (his favorite vegetable) required to fill a pint container. Then, while in New York in 1790, he asked his daughter Maria to pay close attention to the appearance of peas and strawberries in order for him to make a comparison of harvest times with those of New York.[46] He also mentioned that his study of these two plants had coincided with his first observance of whippoorwills. He asked if she noticed a like occurrence in Virginia. Jefferson loved observing nature, and the depth and minute detail he incorporated into his records were truly amazing.

Jefferson probably learned as much of his specific knowledge of plants, tools, and practices from his correspondence with other eager individuals as he did from any formally written manuscripts. He loved to travel to nurseries to share botanical samples and ideas with other interested cultivators. This activity provided a way to combine his Enlightenment scientific and intellectual background with the more personal and emotional love of nature and gardening. Jefferson and a colleague in Washington, Mr. Thomas Main, frequently exchanged knowledge and plant cuttings. Jefferson rarely returned from a visit at Main's without bringing some living thing home with him. Portuguese botanist Abbé Correa de Serra began a long tradition of visits to Monticello in 1813. The two shared a great love of plants, and Jefferson was stimulated by Correa's impressive knowledge. Obviously, then, Jefferson's attention to potential learning

opportunities was not limited to discoveries he made at Monticello.

Even extended journeys from home did not stop Jefferson's studies of the natural world. He often had information on natural observations sent to him from his Virginia lands to wherever he was. Across the ocean in France, he found a kindred lover of the earth in Madame de Tesse. He said in an 1813 letter to her: "I learn with great pleasure the success of your new garden at Avenay. No occupation can be more delightful or useful."[47] He regretted that there were complications and delays in exchanging plants in wartime since he had several new species to send her--courtesy of the Lewis and Clark expedition.

Jefferson was especially intrigued with the educational scientific implications of nature, in addition to the social and agricultural ones. He was very fact oriented and was, therefore, cautious in his scientific claims. He often hesitated to take the risks of possible mistakes although he realized that they were a part of scientific development. He wanted his ideas tested and proven, and he preferred ignorance to falseness.[48]

Jefferson wanted scientific information to be useful to the general public. Natural history was undeniably his favorite division of science. Jefferson's distaste for the scientific divisions of chemistry and geology developed over

several years. He criticized chemistry because it was not understandable or useful to a majority of farmers; and geology confused his image of a flawless nature.[49] Botany, however, he considered a most valuable science for the many benefits it afforded man.

Jefferson's educational plans, most notably for the University of Virginia, included ample support for the study of functional natural science topics. (Thorough education was imperative because steadily increasing intelligence would ensure America's ability to progress and develop with confidence.) His Notes on the State of Virginia was one of the "most important scientific and political book{s} written by an American before 1785."[50] For his strong refutations of derogatory remarks of foreigners concerning America's natural world, Jefferson was seen by many as a defender of America's honor. Joel Barlow, Charles Thomson, and David Rittenhouse were among the supporters.

Jefferson demonstrated his interest in both natural history and in the intellectual and scientific promise of western lands through his avid patronage of the Lewis and Clark expedition. If it were discovered that plants and animals could thrive there, then Jefferson hoped that his agrarian society could be transferred west. Prior to the 1803 expedition and in keeping with his thirst for accurate accounts of the land, Jefferson had sent Lewis (who had a military, not a scientific, background) to Philadelphia for

nine months to study with botanist and naturalist Benjamin Smith Barton so that he would be well-prepared to make useful observations and take intelligent notes on new western species of flora and fauna. So, even though Jefferson had presented this mission to Congress as primarily a commercial venture, the scientific and botanical training that Lewis and Clark received in preparation for their departure showed that he had additional priorities and that he had a clear idea of the types of records he wanted the explorers to keep. He viewed the records and especially the archaeologically-excavated artifacts collected during the journey as further proof of nature's teaching ability. The western lands could be nurtured by independent farmers who would prove themselves to be loyal Americans while they practiced republican virtue.

Jefferson was a pioneer in meteorology. This scientific discipline was an understandable interest for someone who had such a fascination with productivity of the land. By maintaining and analyzing records on weather-related phenomena--such as temperatures, rainfall, snowfall, etc.--the planter could make better use of his planting season, with the result of increased harvests. Perhaps part of his reason for studying weather was based on his desire to refute the claims of some respected writers (the Comte de Buffon among them) who stated that America's climate was detrimental to all living things: The imported animals declined in size and humans aged faster. Only pests, rodents, and insects could thrive in an

environment where temperature fluctuations were as rapid and frequent as they were in America. Jefferson believed they were wrong[51] and gathered evidence to support his theories.

His weather studies provide an excellent example of his desire to understand and feel he had some control of his natural environment, although he was aware that the ultimate authority rested with nature itself. He began what were to become detailed weather records while in Philadelphia in 1776 and continued his observations through 1816. He was immensely interested in finding comparisons in reports from Monticello and wherever else he happened to be. As he had with new plant types, he exchanged weather information with other interested friends from different places. His particular interests seemed to have been snowfall and rainfall. Surprise snow in the spring could destroy a season's first crops, and finding sufficient and reliable sources of water for his plantation needs was a continual problem. In his mind, the ideal situation would be one where climatic conditions world wide for the same day could be communicated and compared.[52] His long absences from home often forced his records to be sketchy until his retirement from public service in 1809.

Despite some unavoidable, uncontrollable climatic problems, Jefferson was obviously quite content with the attributes of Virginia weather as he related in 31 May 1791 letter to his daughter Martha Jefferson Randolph:

> I find nothing anywhere else, in point of climate, which Virginia need envy to any part of the world. Here {New

> York} they are locked up in snow and ice for six months. Spring and autumn, which make a paradise of our country, are rigorous winter for them; and a tropical summer breaks on them all at once. When we consider how much the climate contributes to the happiness of our condition, by the fine sensations it excites, and the productions it is the parent of, we have reason to value highly the accident of birth in such a one {state, land} as that of Virginia.[53]

Jefferson turned to nature as the ultimate teacher and creator in terms of a governing set of natural laws. He concluded that nature's principles functioned without the help of any divine force. He wanted to study nature for pragmatic purposes and to follow nature's guidelines to live a full life. This conviction was a prevalent one during the Enlightenment; people believed that the same types of laws governed man's and nature's activities and operations. Man should have faith in these laws and apply them to one's life.[54] The belief and hope was that, if man could reflect nature's direction well enough, all disadvantageous aspects of human life would disappear and man could enter a new period of prosperity. Jefferson desired a society of relatively unrestricted people who, with unnecessary restrictions removed, could master their environment and reach their inherent potential.

Jefferson believed strongly in the perfection of nature, and he followed nature's order to create a set of personal values. This planet, as the Linnaean model suggested and as Jefferson believed, observed a pre-established format: all

things that would ever exist here, existed already; no new ones would develop; and nothing became extinct. Every living thing had a permanently assigned and reserved space.[55] His views on extinction, however incorrect, were strong. In his mind, if a species once here on earth was removed, nature had made a mistake. He feared that if one species vanished, others would follow and soon nothing would be left. Nature surely would not allow this to happen.[56]

Nature's perfect plan supported Jefferson's assumption that the earth was for the living. Part of this well-formed plan involved what he felt was a frugal use on nature's part of dead beings, and he said he was not afraid of death himself. He wrote: "The dead are not even things. The particles of matter which composed their bodies, make part now of the bodies of other animals, vegetables, or minerals, of a thousand forms."[57] Jefferson's belief in the inherent goodness of nature allowed him to age gracefully. He said, "First one faculty is withdrawn and then another, sight, hearing, memory, affections, and friends, filched one by one, till we are left among strangers."[58] Though the end result appears devastating, he viewed the process as an example of nature's kindness--a gentle and progressive preparation for losing **all** of one's faculties and dying.

One reason Jefferson embraced an agricultural economy as strongly as he did was that it seemed to be the only type of economic structure in harmony with nature's laws or

principles. America had the wonderful opportunity to remain "unblemished" so to speak (a challenge that Britain had failed) by maintaining this simple, virtuous agricultural state--as found in the ultimate model of Virginia, for example. Jefferson celebrated this simple life, although he also realized the cultural and educational benefits available in the cities.

Jefferson believed that man should live by surrounding himself with as much of the natural world as possible and not subject himself too much to the treacheries of city life. Corruption and anger thrived in cities and among those living there. Merchants felt no loyalty to their homeland, for their love was just as strong for the country from where their trade profits came. He said, "They [those who live in the commercial cities] are as different in sentiment and character from the country people as any two distinct nations, and are clamorous against the order of things established by the agricultural interest."[59]

Although Jefferson strove to live a simple and natural life (perhaps partly from economic necessity) and worked to learn all he could from nature, he resigned himself to the fact that there were some particulars of nature that man would never comprehend. Nature functioned by means of a higher power. He said, "...the **modus operandi** of nature is this, as in most other cases, can never be developed and demonstrated to beings limited as we are..."[60] This belief only served to

increase the awe he felt toward the natural world and the desire to understand its realities more completely.

III. Nature as Friend

Jefferson found a great deal of aesthetic and emotional pleasure in nature; he, perhaps more than many other of his contemporaries, was able to establish a reciprocal relationship with the natural world. His love of the land and its characteristics, especially its beauty, compelled him to travel extensively and record every observation. He preferred to travel alone because he was freer to think and contemplate the scenes before him. He enjoyed travels in Europe to Great Britain (1786), to Italy and France (1787), and to Germany (1789). He always marvelled at the beauty of the land and compared Europe's geography with that of America.

Jefferson had a reserved nature and his earlier records were primarily factual with no emotion or cultivated reactions (e.g. his first notes on a "Tour of Paris"). His years in France as Secretary of State (1784-1789) were the turning point for him culturally and stylistically. He viewed many highly-celebrated gardens with the lovely Maria Cosway, wife of the painter Richard Cosway. Jefferson's letters to Mrs. Cosway were vibrant and full of flowery language and romantic descriptions of panoramas. And in comparison to his earlier

notes on Paris, his travelling instructions of 1788 to Mr. Rutledge and Mr. Shippen (two young men setting out on the Grand Tour) included what they should see, how they should see them, and his personal reactions to various things he had done.[61] In short, he proved himself capable of thinking in a non-practical, non-utilitarian, and emotional manner.

In England, his reaction to architecture was primarily negative, but his response to the land was predominantly positive. Jefferson also loved the Italian landscapes; they provided him with a wilder atmosphere than he had experienced in Britain. He commented to Maria Cosway on the Chateau di Saorgio near Ciamdola:

> Imagine to yourself, madam, a castle and village hanging to a cloud in front. On one hand a mountain cloven thru to let pass a gurgling stream; on the other a river, over which is thrown a magnificent bridge; the whole formed into a basin, its sides shagged with rocks, olive trees, vines, herds, etc. I insist on your painting it.[62]

Germany's landscape was not of singular quality in either a pleasant or unpleasant manner. He had reached the chateau at Heidelberg one April when the flowers were in full bloom, and he was very pleased with the gardens. They climbed the mountain in terraces and he exclaimed, "The situation is romantic and pleasing beyond expression."[63] In Bonn, he focused his attention on the number of walnut trees in the open fields and on the extensive viticulture. He called the Rhone valley the most fertile and richest land he had ever seen. He observed various techniques of wine growing that responded to the composition of the soil, climate, and amount

of fertilizer used. He said, however, "The gardens at Schweitsingen show how much money may be laid out to make an ugly thing."[64] He also criticized the extravagance of European cathedrals and, despite the beauty of the unfinished Köln cathedral and his own love of architecture, he showed greater interest in the economic and agricultural developments of the city than in the buildings.[65]

While travelling in his homeland, Jefferson set down positive aesthetic reactions to many regions of America too. His accounts of the natural world he observed on a trip North in 1791 presented nature in a very pleasant manner. For example, he found Lake George, in New York, "without comparison, the most beautiful water" he had seen. He said, "It is formed by a contour of mountains into a basin thirty-five miles long, and from two or four miles broad, finely interspersed with islands, its water limpid as crystal...."[66] He concentrated his attentions on the many types of trees that blanketed the sides of the mountains, and he noted an occasional outcropping of rock that prevented monotony of the scene. Reports of Jefferson's leisure activities are very rare, but on this trip, he related some outdoor activities, which included fishing, shooting squirrels, and killing two rattlesnakes.[67] He collected information on the visible wildlife, and he complained of the hot, sultry weather which he compared to the Carolinas or Georgia. While on this trip, Jefferson restated a familiar theme evident throughout much of

his written work: he felt that nowhere was there so perfect a landscape and climate as in Virginia.

In all of America, one particular piece of property in Virginia was Jefferson's pride and joy. He had purchased Virginia's Natural Bridge along with an additional 157 acres in 1774 for 20 shillings. He believed the bridge to be one of nature's most perfect creations and well worth a trip from Europe to view it. He was quite talented in his ability to illustrate that landscape in writing and yet said he was at the same time hindered by the lively terrain that taxed his ease of composition. He provided spirited descriptions of being on and a part of that bridge:

> You involuntarily fall on your hands and feet, creep to the parapet and peep over it. Looking down from this height about a minute gave me a violent headache. If the view from the top be painful and intolerable, that from below is delightful to an equal extreme. It is impossible for the emotions arising from the sublime, to be felt beyond what they are here; so beautiful an arch, so elevated, so light; and springing as it were up to heaven, the rapture of the spectator is really indescribable.[68]

This type of description is highly emotional and uncharacteristic of his Enlightenment training and much of his earlier writings about nature.

Access to the Bridge was denied to no one, for Jefferson believed a "public trust" was involved in the ownership of one of nature's most awe-inspiring creations.[69] He attributed the Bridge's origin to some huge convulsion in the earth that had almost divided one strong mountain into two. (In fact, the Bridge is the remainder of the roof of a collapsed cave.) He

planned and eventually did build a hermitage there--a small log cabin. His pride in the ownership of that breathtaking natural formation never diminished. Jefferson called his Bridge "the most sublime of nature's works...."[70]

In keeping with the Enlightenment standards of order, one of Jefferson's greatest pleasures was landscape architecture, most clearly visible at Monticello and at the University of Virginia. Participation in this activity allowed him intimate and interactive contact with the natural world. Jefferson believed that gardening and the aesthetic arrangement of Nature to form a meaningful design were fine arts. Nature, he said, was what was untouched or untampered with by man; art was nature that had been altered or enhanced.[71] The immense pleasure he found in ordering and fostering growth in the landscape was closely related to his more scientific pursuits in agriculture and horticulture.

Jefferson was no doubt greatly influenced in his own design preferences by people he knew and landscape designs he had observed while in Williamsburg. The College of William and Mary, particularly under James Blair's leadership, showed an interest in developing gardens not just for beauty's sake, but to provide a place to conduct botanical and scientific investigations. Jefferson incorporated this blending of plantings for productivity, aesthetic pleasure, and

experimentation years later at Monticello. (The College's gardens were laid out in formal geometric style; this design was not especially pleasing to Jefferson, but the method was considered proper for public buildings at the time.) George Wythe's garden was another example of the combination of practical and ornamental plants -- yet his were arranged in a design that was less symmetrical and geometrical than most Williamsburg gardens.[72] From observing these and other examples, Jefferson began to learn what he liked and what he did not like.

Jefferson witnessed with great interest the theoretical changes in preferred landscape design styles. During the second half of the eighteenth century, design standards moved away from rigid geometric patterns toward those showing noticeable movement and life. The publication of William Hogarth's Analysis of Beauty in 1753 revolutionized the planning of landscape gardens. Hogarth viewed nature as continuously moving, alive, and dynamic. His perfect "line of beauty" (alternating concave and convex curves ()) became an essential design element in landscape sculpturing as it brilliantly echoed the soft, undulating, intimate curves of the Rococo period of decorative arts. Jefferson featured this line of beauty in his backyard path at Monticello and in his famous serpentine walls at the University of Virginia.

Many eighteenth-century garden enthusiasts criticized the sterility of the seventeenth-century formalized gardens and

turned their attentions to supporting a more simple and natural approach which could combine a practical vegetable garden with a more ornamental one -- as Jefferson had witnessed in Wythe's garden. John Bartram, America's first native-born naturalist, encouraged landscape gardens where the design was a compromise of man and nature.[73] Let nature suggest how she should be sculpted; the ideal eighteenth-century garden must appear to be unmolested by man. However, many gardens maintained a symmetry in their designs, acknowledging an undeniable influence and the authority of man. Jefferson had his own theories about how to create his perfect design. The final result was that his gardens were functional and at the same time were arranged to be walked through -- not merely viewed, but experienced. Visitors could enter into a reciprocal relationship with the land there.

Jefferson's support for a compromise between man and nature in the creation of the ideal landscape design was evident in many of the projects he participated in. Jefferson's ideas for the University of Virginia's landscape imposed structure, yet in a soft and subtle way, on the land. Trees were positioned to enhance the area's character and the fourth side of his academic village was left open so visitors could enjoy the natural wildness of the nearby mountains. And with the same goals in mind, under Jefferson's direction, Pierre L'Enfant created a romantic town plan for Washington, DC, complete with expanses of grassy areas and long vistas

mixed with groups of buildings.[74]

Jefferson kept many books on botany, agriculture, and gardening in his library. The writers whose work Jefferson admired most preferred the new and graceful curvilinear style and shunned the impersonality and coldness of the earlier angular designs. Thomas Whately's Observations on Modern Gardening (1770), Philip Miller's The Gardener's Dictionary (first edition, 1724), and Bernard MacMahon's The American Gardener's Calendar (1806) were among the most influential in the formation of Jefferson's own concepts.[75]

During a tour of numerous English gardens in 1786, he carried Whately's book with him as he observed many of the gardens described. Whately, like Bartram, stressed **naturalistic gardening** and Jefferson incorporated many of Whately's ideas into his landscaping for Monticello. Jefferson praised MacMahon's 1806 publication because it concentrated on growth conditions **in the United States** whereas most books to that point had discussed European conditions exclusively. These two corresponded and Jefferson received plant samples from MacMahon frequently.

Jefferson had mostly positive memories of his garden tour of England in 1786. At the opening of his account of these travels, he stated, "My inquiries were directed chiefly to such practical things as might enable me to estimate the expense of making and maintaining a garden in that style."[76] He expressed his particular pleasure in a letter to John Page:

"The gardening of that country is the article in which it excels all the earth. I mean their pleasure gardening. This, indeed, went far beyond my ideas."[77] And to William Hamilton (July 1806), he wrote:

> Thither without doubt we are to go for models in this art. Their sunless climate has permitted them to adopt what is certainly a beauty of the very first order in landscape. Their canvas is of open ground, variegated with clumps of trees distributed with taste. They need no more of wood than will serve to embrace a lawn or glade.[78]

He realized he could not completely transform his Virginia mountaintop into an English landscape -- nor did he seem to want to. For example, the bottom portion of the mountain was extensively covered with thick, native undergrowth and he was inclined to leave it that way -- so long as it did not make transportation too difficult. It should also be noted that Jefferson did not like <u>all</u> aspects of all English gardens. Some gardens, like Caversham in Surry and Stowe in Buckinghamshire, done in the older style with an abundance of straight walks or drives, he found unappealing.[79]

Simplicity in landscape design, then, as found in the eighteenth-century English model, should be a fundamental part of any good plan. For example, while he was serving as Secretary of State to France from 1784-1789, his dwelling place in Paris, L'Hôtel de Langeac, boasted lovely gardens in the informal and popular English style, and he praised them profusely. Jefferson also incorporated the English element of clumping trees in his plans, not only for the decorative

effect of enhancing the views and the feeling of openness in a landscape but also for the functional purpose of providing shade from the hot Virginia sun. There were other considerations as well. For example, Jefferson believed that excessive ornamentation pointed to an landscape architect with little genius and even less imagination. Moderate ornamentations like ruins were often maintained for use in the more romantic landscape gardens (a holdover from classical designs) to stimulate a pensive, melancholy mood. Not to be left out, Jefferson included in his first garden proposal a collection of temples, towers, statues, and unsculptured land.

Accepted eighteenth-century landscape design theory stated that, ideally, a plantation's buildings and the land around it should complement each other. Jefferson designed both Monticello's structures and its gardens with great deliberation, and he believed he had reached an effective balance. Interestingly, each of these associated elements was influenced by a different style. His buildings were influenced by the architect Palladio in the classical tradition--straight and mathematically proportioned. The gardens showed vitality and unstructured curves. His architectural choices traced their roots to the ordered and scientific Enlightenment; his landscape design expanded to incorporate his romantic tendencies.

Jefferson's ultimate garden plans for Monticello (1807) included a roundabout walk to be placed behind the house.

Narrow flower borders, some with experimental plants, outlined both sides of the serpentine walk and flowering shrubs were planted in oval beds along the way. These patterns provided visual variety and **la vivacité** as they created an ever-changing viewpoint of the observed scene: each presented a new angle and sensory experience.

The piazza on the southeast end of the house was glassed-in to create a greenhouse where he could experiment with some more exotic plants. He lost everything kept there in the winter of 1810/1811, and the greenhouse is not mentioned again in the Garden Book after that time. Scholars are therefore unsure of how much he actually used it after that disastrous winter--if he ever did again. He was able to maintain two other successful nurseries for nurturing seeds and young plants.

So strong was Jefferson's attachment to his land that, unlike many plantation owners who simply provided the funds and perhaps designs to develop their lands, he continually walked among the workers and provided personal, sometimes even hands on, supervision. He stressed the importance of walking the land to provide mental cleansing and to promote good physical health. He believed that a specified time each day should be set aside for this exercise; and, regardless of the day's weather, one should walk for two hours. No intellectual thinking was to be done at this time for the purpose was to clear and relax the mind and simply enjoy the beauty of

nature.[80]

After a life of studying, travelling through, and working the land, Jefferson understandably had great affection and respect for it. He professed the strong belief that America, in the mid to late eighteenth century, was a still pure, unexplored land with incredible potential. This was the only remaining country where "the noblest gardens may be made without expense. We have only to cut out the superabundant plants."[81] He said, in retrospect:

> I have often thought that if Heaven had given me a choice of my position and calling, it should have been on a rich spot of earth, well watered, and near a good market for productions of the garden. No occupation is so delightful to me as the culture of the earth, and no culture comparable to that of the garden.[82]

Through his comprehensive cultivation of Monticello's landscape, Jefferson partially fulfilled this dream. Detained for some time during his years in public service, he returned to Monticello after retirement with great happiness--excited about relaxing and enjoying his remaining years surrounded by the beautiful landscape of his little mountain. The Marquis de Chastellux, during a 1782 visit to the little mountain, summarized Jefferson's ideal quite succinctly and poetically, "But it was a debt Nature owed to a philosopher, and a man of taste, that in his own possessions he should find a spot where he might best study and enjoy her."[83] Jefferson once stated: "All my wishes end, where I hope my days will end, at Monticello. Too many scenes of happiness mingle themselves

with all the recollections of my native woods and fields, to suffer them to be supplanted in my affection by any other."[84]

So, although Jefferson followed many principles that were characteristic of the Enlightenment such as a belief in natural laws, limitless resources, science, reason, and natural order, he did believe that certain limits to land usage existed and that these limits would be presented to the individual by his own common sense. To be sure, Nature existed to be ordered by man and to provide for him, but man had an obligation, not only to the land, but ultimately to American democracy, not to abuse or demand too much of the natural world. There was much to be learned and gained from nature that could benefit the individual and American society as a whole. Experiencing, examining, and developing the land could provide great political and financial rewards, intellectual challenges, and personal pleasures for man; and the benefits of one's intimate relation with nature would expand to keep him, and eventually all of America, virtuous and strong.

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CHAPTER II

HENRY DAVID THOREAU

Fifty years separated the work of Jefferson and Henry David Thoreau; and, by the time Thoreau began to write, the evidence of man's overuse of the environment was more visible. Early nineteenth century markets had opened up dramatically as the United States prospered economically during the Napoleonic Wars. Farmers began experimenting with new crops in addition to their standard productions of items needed to feed their families and their animals; thus their workloads increased -- as did the intensity of soil cultivation. No longer could the work load be handled exclusively by the farmer and his children as had been standard practice in the past. More and more, workers were hired who had no emotional connection to the land at all; they were simply being paid to work on it. Increasingly, there was a problem with a shortage of workable eastern land, and many farmers treated nature not as a means for growing what they needed but as a commodity to be used to attain more wealth.

Also at this time, the intellectual movement known as Romanticism, and within that--the more extreme philosophy known as Transcendentalism, were gaining support among certain elements of the American population, especially within the New England states. These nineteenth century schools of thought

stressed a personal relationship of man and nature and, more than that, the inextricable interrelatedness of man and the natural world. Within that context, a more positive outlook toward wilderness, which previously had been viewed as chaotic and therefore hostile, began to develop among some groups.[1] These unordered areas of land intrigued one's imagination and could inspire awe at the complexity of nature's creations. Thus, nature in all its forms was to be respected and even revered.

I. Nature as Provider

Thoreau viewed nature as a provider as Jefferson did -- a provider of sustenance and necessary economic support and a provider of freedom from societal restrictions. But, understandably, based on the context of his time, Thoreau reached his conclusions by approaching the subject from a completely different perspective and from a different background than Jefferson had.

Thoreau agreed with Jefferson that particular care must be taken not to become too greedy and to participate in injurious and irreversible exploitation. However, Thoreau was more cautious about the land's function as a producer. Whereas Jefferson believed that agriculture supported the best pattern for political economy; Thoreau professed that he despised production for market (although he did take part in

the activity of retailing crops -- one of many ironies between Thoreau's theories and his actions). He believed that one must not become too blindly and totally focused and dependent on the productions of the earth. The land would gladly provide needed items and economic stability so long as it was not abused. It was no longer wise for man to view himself as the conqueror of nature he had believed himself to be in previous centuries.

Whereas Jefferson's family background in Virginia had been one of economic comfort -- perhaps even excess, Thoreau grew up in Concord, Massachusetts, in a family whose finances were often strained. Thoreau's father was forced to declare bankruptcy in 1817, the year of Thoreau's birth, after his shopkeeping business failed. He then turned his attention to making pencils and eventually became quite successful at it. By the 1840s, the family was finally able to enjoy financial security. Thoreau undoubtedly learned an early lesson in economic reality from his father's experience that he would remember throughout his life. From his mother, he received his first exposure to subjects of importance to her; many of these topics grew to be so for him -- in particular, her interests in social work and natural history.[2]

The economic climate was often uncertain as Thoreau was growing up -- not just for his immediate family, but for many other Americans. In 1836, the wheat crops had failed and cotton prices had dropped. So the following year (the year

Thoreau graduated from Harvard), when the banks stopped paying out specie for a time, people panicked and an economic crisis ensued. Understandably there were many mercantile failures. The experience was the first of that magnitude Thoreau had experienced and, at the impressionable age of 20, events must have been startling and even frightening.

Also at the time of Thoreau's departure from university, farming was still the primary occupation of Americans. Manufacturing, however, was increasing steadily. Wood remained the primary source for fuel; coal had not yet become the standard it would be later. Therefore, due to the continually increasing demands for fuel, the woodlands near the Thoreau home were shrinking rapidly as numerous trees were cut for transport to Boston, a busy trade center waiting eagerly for the railroad and further development. Perhaps these events were the start of Thoreau's concern and distrust of the power that money had been given and the basis of his emotional pleas to limit material and environmental demands.[3]

From the beginning of America's history, the landscape was often praised as the symbol and, indeed, the proof of the greatness of developing American prosperity.[4] As Jefferson had, Thoreau refuted the Comte de Buffon's negativity and praised America's fertility and botanical beauty, as well as the land's potential for production.[5] However, by the time of Thoreau's writing, he had come to believe that industrial and technological advance had not provided the benefits for

humanity that it had promised; it was instead moving to crush both the spirit of man and the fertility of nature. He stated that Americans must be cautious of increasing industrialization: one must be "wary of the city" and "preserve as far as possible, the advantages of living in the country."[6] He supported the placement of a town adjacent to a tract of undeveloped land, so that those people unfortunate enough to be trapped in the city might have some healthful contact with the natural world. Much as Jefferson did, Thoreau needed and supported a balance of city and country.

Thoreau felt that two of the main problems facing his fellow Americans, restricting their relations with nature and causing their "quiet desperation," were the incredible societal emphases on economic growth and the uncontrolled expansion of technology which changed all aspects of life. He felt that making America prosperous was more complex than simply expanding its territorial holdings and developing commerce and manufacturing. Distinct possibilities for economic prosperity existed, but they must involve an explicit departure from the material and cultural pressures and expectations of society.

As people migrated west and into the Ohio Valley and the Great Lakes region, the area's population and its density increased fourfold between 1829 and 1869. Aside from the obvious pressures this expansion placed upon the soil's fertility, Thoreau lamented the fact that this type and speed

of growth required men to work tirelessly to reach society's goals and not the goals of their own choosing. The landowner or farmer existed primarily to satisfy the demands of the economic machine and social conformity. The principal goal of agricultural production had become economic profit. Individuals did not have time to maintain the desirable integrity toward the land or other people for their "labor would be depreciated in the market" if they slowed their work to make the attempt.[7] Thoreau expressed his sympathy toward the individuals caught in this trap and also toward nature; he felt that farming was an capricious intervention into nature and was yet another unnecessary attempt of humans to control the natural world. Thoreau firmly believed that nature was not a commodity to be manipulated in this fashion.

Nature could be a willing and abundant provider--and would be much more so if it was not mistreated. One should be looking to nature as a producer on a limited and personal basis so that the chance of irreversible damage to the land -- created by overpopulation and overcultivation -- was reduced. Small scale or subsistence farming could meet man's need (in theory at any rate) and not destroy the earth. Man's essential needs were food, shelter, clothing, and fuel, he said.[8] One should therefore be working to produce what he alone needed from the land. (Thoreau, although a proponent of this ideal, could not maintain this course and participated in the market economy through his production of beans and by

helping with his family's pencil business.)

From this philosophy stressing restraint, it follows that Thoreau supported an approach to land development and production that was less wasteful and less abusive to the land. For example, in Maine Woods, Thoreau discussed a responsible method for clearing the land in which the ashes of felled and burned trees provided the needed fertilizer for the planted potatoes.[9] He also favored communal ownership of land. He believed that individuals wasted precious time buying and selling property instead of enjoying nature's blessings.[10]

Like Jefferson, Thoreau also kept detailed notes on a regular basis and summarized his gardening activities in the hopes that these writings would help the farmer prevent losses in subsequent years.[11] He suggested how to space one's garden and when to harvest. He explained various dangers from worms and woodchucks. Thoreau's written works, especially his journals, attest to the seriousness of his interest in and observation of the natural world.

Interestingly enough, after Thoreau's thorough immersion in nature at Walden Pond (1845-7), he experienced continued and perhaps increased intimacy with nature while living with his parents in the center of town.[12] From their house, he travelled frequently and expanded upon previous experiences. During this time, Thoreau developed a passion for untamed nature; he preferred a space less refined than the calm

pastoral landscape. Wildness came to be his source of vitality, motivation and development. Human productivity of all kinds depended on utilizing this natural vigor.

This life-enhancing force of nature was not always calm and supportive, however, as he discovered during his visit to Mount Ktaadn in 1846. There Thoreau observed nature's raw, violent, destructive forces at work. But that dark side was a part of nature, and therefore essential, just as much as it was a part of human nature. It should be embraced as a fundamental part of life, and not ignored or denied. Wilderness was **ultimately** essential, however, because of its crucial influence on man's thought processes and his inner being and health.[13] He fiercely asserted that "In wilderness is the preservation of the world."[14]

Some of the historic fear, or at least a healthy respect, for extreme wilderness conditions manifested themselves in the general populace during the nineteenth century and, to some extent, in certain of Thoreau's works -- like Ktaadn. After the first of three trips to Maine in which he encountered truly primitive nature, his ideology expanded to include a deeper appreciation of civilization. So, although, he continued to prefer the untamed over the tamed, he also realized the benefits of the pastoral landscape and the need for a balance of some organization and culture with the undisciplined natural world.[15] However, for many, understanding how (or even desiring) to sustain the delicate

equilibrium of civilization and free nature that Thoreau praised was not an important priority. He expressed sorrow and oftentimes anger in the fact that man's inability to maintain this balance often caused damage to the land and the animals in the name of progress and development.

Man had cultivated much of the life and wildness right out of the forests by the intensity of his clearing activities and developmental plans. For example, trees were cut down for profit rather than for necessity. During a trip to Maine, he commented: "The mission of men there [the numerous logging towns near Bangor] seems to be, like so many busy demons, to drive the forest all out of the country, from every solitary beaver swamp and mountainside, as soon as possible."[16] Thoreau was also concerned about the repercussions of the speed of damaging groundcover erosion after the trees' clearance, but most people could not or would not anticipate problems that far ahead. (Again Thoreau did not appear concerned about the irony in his protestations and the fact that his own family's business of manufacturing pencils required that trees be cut down.)

Another side effect of progress, Thoreau reported, was that trains muddied the clear waters of Walden Pond with their dirt and increasingly polluted the air with their noise. Even the seemingly unimportant pure ice of the pond was cut and hauled away to be sold, "unroof[ing] the house of fishes, and cart[ing] off their very element and air...."[17] There were

fewer and fewer wildlife species surviving each year. Thoreau stated how sad and poor a country must be which could not support animals.[18] He believed that America's economic system was making unreasonable demands on most people and on the natural world, as well as being responsible for irreversible damage done to the latter.

Regardless of the damage done to it, Thoreau said, "Nature is really very kind and liberal to all persons of vicious habits--they take great licenses with her."[19] Despite the fact that man had "poisoned the ground" with his demands for more and more resources, nature worked skilfully to cover the damage and smooth these blemishes.[20] He said, in Maine Woods: "The shores rose gently to ranges of low hills covered with forests, and though, in fact, the most valuable white pine timber, even about this lake, had been culled out, this would never have been suspected by the voyager."[21] Americans must learn to restructure and care for the areas they were already using to recover the freshness and beauty of nature in those sites. For truly unblemished land, one would have to travel west to the wilderness areas there. Development was relatively new in those areas and much of the land still retained its inherent flawlessness.

Based on economics alone, Thoreau believed that individuals certainly would be better off by restricting their dietary and material needs to a minimum. Working the earth for oneself alone might slow down the speed at which so called

"progress" and "civilization" were advanced, but it provided freedom from the fluctuations of price and supply occurring in foreign markets[22] and at the same time allowed for greater intimacy with the growing earth.[23] For example, he described the wonderful emotions of walking through "the country of hops," imagining what would later be produced there, and of gathering and eating the ambrosial raspberries growing alongside the road.[24] As further example of the pride one could feel by being self supportive, Thoreau related a story of gathering dead wood from the forest near Walden Pond to fuel the fire which cooked his meal. He found the meal more appetizing because he had collected, not only the food, but the wood himself.[25] He said:

> ...I am convinced...that to maintain one's self on this earth is not a hardship but a pastime, if we will live simply and wisely; as the pursuits of the simpler nations are still the sports of the more artificial. It is not necessary that a man should earn his living by the sweat of his brow....[26]

In other words, an individual should strive to find a position where he can view necessary agricultural pursuits as a pleasure and a way to realize spiritual fulfillment. Working the land should not be a drudgery. The land provided more than simply physiological nutrients; it also provided for emotional health and intellectual growth.

Thoreau believed, as did Jefferson, that industrial and technological development, if left unchecked and uncontrolled, would signal the start of an irreversible process--the loss of simplicity--and, with that, increased greed, over-production,

deterioration of nature, and a violation of our responsibilities to preserve and respect nature. He fervently hoped that people would recognize what a wonderful, blessed existence they could have if they were strong enough to resist the temptation to participate in the frenetic world of "progress" and maintain themselves as beneficiary of all nature had to provide. Thoreau desired an ideal state where, "Man's works [would] lie in the bosom of nature, cottages be buried in trees, or under vines and moss, like rocks, that they may not outrage the landscape."[27] Harmony, not constant competition, was the key to both survival and happiness in the natural world.

II. Nature as Teacher

One of Thoreau's most famous quotes says, "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived."[28] He was extremely interested in what he could learn from nature: emotionally, intellectually, and scientifically. This interest had begun at a young age, as he absorbed ideas about natural history from his mother's passion, from books, and from contact with teachers and acquaintances.

From 1833-1837, Thoreau attended Harvard University. The experiences he had there had great influence on him and helped shape and focus his personal beliefs. Even at this early age, Thoreau yearned for an interactive approach to learning. One of his complaints about classes at Harvard was that they were too much book oriented and not enough "hands on." During his college career, he took Greek, Latin, Italian, and French and, beginning in his first term, became particularly interested in travel literature. He read a great deal of Goethe's work and continued to do so after school. Goethe's Italian Journey made a profound impression on him. Thoreau began to feel a great excitement and liveliness in nature after reading this work. He agreed with Goethe's idea that nature functioned under certain laws.[29] Goethe and Thoreau both realized, and accepted -- as Jefferson had, that there was a part of nature that was destructive, not nurturing. One must learn to live with the less-controlled elements of nature too.[30]

Ralph Waldo Emerson was responsible for directing much of Thoreau's intellectual and spiritual development. Emerson's Nature was published in 1836 and portrayed a great openness toward science and self reliance as they related to nature. The primary inspiration Thoreau found in this piece was the suggestion that individuals should turn to nature for reliable solutions to ethical problems, rather than to a God, other men, or the state. The laws of nature mirrored the laws of human nature.[31] (Jefferson had shared these beliefs too,

although Emerson's writings were not their foundation.)

Quite early in Thoreau's post-university life, he and Emerson developed a close, emotional relationship. Immediately following graduation, Thoreau began teaching -- a career that lasted only one month. During that time, Emerson persuaded him to begin keeping a journal. Among early journal themes were the woods, fields, the river, solitude, and the simple life. Aside from Nature, which was a major influence on Thoreau, Emerson's guidance was felt more through daily association than through any written work.

As time passed, however, several issues emerged that placed a distance between Thoreau and Emerson. Emerson taught his followers that nature had great value in its economic benefit; and yet, beyond that, nature could serve a higher purpose as a resource for man's spirituality and creativity -- especially for his imagination. He lauded the conversion of land to various economic uses, whether for agriculture, commerce, or manufacturing. And he enthusiastically viewed the progress of man's westward expansion.[32] It was on the subject of the positive aspects of industrial expansion that Thoreau diverged most sharply from his mentor's teachings. He was much more hesitant about the constructive results of progress; he feared too much development might happen too fast and cause more harm than good.

The diversion of their ideas can also be attributed in part to Thoreau's irritation at being continually called an

imitator of Emerson. In addition, Emerson did not share Thoreau's love of pure wilderness and was openly critical of his fascination with it. Another reason for their parting of the ways may have been Emerson's growing conservatism. Emerson tended to be more abstract and idealistic, whereas as Thoreau matured, he leaned toward the concrete and practical. In 1852, Emerson reproached some of Thoreau's work as being too factual, too intellectual. Thoreau stood his ground against the criticism but was clearly hurt. The following year, their friendship was again strained when Emerson accused Thoreau of having no ambition. Although the relationship between these two suffered due to differences of opinion and other tensions, there was never a complete break.[33]

Thoreau read copiously throughout his life and, by remaining open to new thoughts, continued to modify his ideas, his emotions, and the tone of his written works. Beginning in the 1840s, Thoreau found particular writings that touched him emotionally and spiritually, as well as intellectually. For example, in 1840, Thoreau began to study Eastern thought for the first time. He had a great interest in Oriental religions, especially Hinduism, because of the value it placed on man's reciprocal relationship with nature, as opposed to the exploitative one frequently championed by Christian doctrine.[34] Thoreau also spent some time in the early 1840's reading Virgil's Georgics. This work spoke great praise of farming with details of procedures and other agricultural

information. Virgil supported hard work and its benefits. His worker was happy, self-sufficient, and earthloving. Thoreau approved of this type of work ethic much more readily than he did the Protestant work ethic.

In the early 1850s, Thoreau read and enjoyed such agricultural writers as Cato and Palladius. In the late 1850s, he was also reading early naturalists, including Pliny and Aristotle. Thoreau read Shakespeare, Chaucer, and Milton. He held a great reverence for Milton and quoted him extensively throughout his works. He found a kindred spirit in William Wordsworth whose writings explored nature with an interactive reverence. And, in 1852, he discovered the work of the Rev. William Gilpin. Gilpin's work helped focus and encourage Thoreau's interest in the "picturesque landscape."

As Thoreau grew older, he became a more ardent and detailed observer of the ever-changing and developing land, and his writing became increasingly more scientifically oriented. His cataloguing of events and observed phenomena increased in the 1850s and 1860s in his journals. To make the most of his educational excursions, Thoreau would frequently wait until the day after an enlightening walk to commit his thoughts to paper, thus giving the information time to be absorbed and to deliver its full impact.[35]

As he compiled his findings, he inferred certain laws of nature which extended to many areas of human existence. He said, "The laws of nature are science but in an enlightened

moment they are morality and modes of divine life. In a medium intellectual state they are aesthetics."[36] In other words, Thoreau felt that the predictable occurrences of nature were typically viewed from a scientific perspective -- as a systematic happening that could be rationally explained. In a moment of slightly heightened intellect, an individual could view these laws as something to be praised and admired, while maintaining an emotional distance. Finally, during a time when one possessed an exceptional intellectual or spiritual understanding of natural laws, they provided a doctrine by which an individual could live an inspired and happy life. (Jefferson would have agreed with the idea of natural laws as science and as a code for an ideal life, but whether or not he distinguished between different levels of interaction with nature based on one's intellectual or spiritual acuity is unknown. For Jefferson, the value of natural laws was clearly obvious to anyone who knew the pleasure of working the land.)

For Thoreau, pursuing a natural lifestyle provided a sane and much desirable alternative to the often materialistic, oppressive, and meaningless character of an intense city life. He concluded, perhaps naively, during his stay at Walden Pond that he was "convinced, that if all men were to live as simply as [he] then did, thieving and robbery would be unknown."[37] Thoreau physically and symbolically submerged himself in nature as a way of cleansing away the tarnish of the cities. For example, he said:

> Every morning was a cheerful invitation to make my life of equal simplicity, and I may say innocence, with Nature herself. I have been as sincere a worshipper of Aurora as the Greeks. I got up early and bathed in the pond; that was a religious exercise and one of the best things I did.[38]

The peace he realized in nature enhanced and sped up his nature studies. Apparent disappointments could frequently be minimized there. He wrote:

> If a shower drives us for shelter to the maple grove--or the trailing branches of the pine--yet in their recesses, with microscopic eye, we discover some new wonder in the bark, or the leaves, or the fungi at our feet....We can study Nature's nooks and corners then."[39]

Thoreau stressed the necessity of turning to nature as a teacher -- on an emotional level even more so perhaps than Jefferson had -- because he saw nature as an essential spiritual and moral tutor in addition to a scientific guide. The more perfectly a man could mirror the functioning of nature, the better off he, and the world, would be. When he left for Walden in 1846, friends were concerned that he would soon become bored with "so little to do." He responded, "Will it not be employment enough to watch the progress of the seasons?"[40] Man could not expect to live in harmony with the natural world and receive its rewards until he could look confidently to nature as his teacher.[41]

Thoreau was particularly drawn to the mountains as a symbol of clear vision combined with quiet power. He suggested, "One must needs climb a hill to know what a world he inhabits; the view is clearer and more complete, the scene is intoxicating."[42] The mountains were one part of nature that

was untamable; they were most definitely wild and desolate. He marvelled that there still remained a place upon which man had not encroached for settlement and industry--although brash men still attempted to conquer them. "The tops of the mountains are among the unfinished parts of the globe....Only daring and insolent men, perchance, go there. Simpler races, as savages, do not climb mountains,--their tops are sacred and mysterious...."[43] He said surely the mountains must angrily question why man goes where he has not been invited.

Of all of the entities he observed in nature, Thoreau seemed most captivated by his studies of water--perhaps because water was, for him, a model and symbol of purity and virtue. He wrote: "A lake is the landscape's most beautiful and expressive feature. It is earth's eye; looking into which the beholder measures the depth of his own nature."[44] Walden Pond, especially, was symbolic of Thoreau's ideal of human nature: cool, deep, clear, pure, and infinite. After taking various measurements in the course of study of his pond, he drew a map and recorded his findings of the bottom's depth. He then laid a ruler on the map and concluded that the "line of greatest length intersected the line of greatest breadth <u>exactly</u> at the point of greatest depth."[45] Based on these findings, he asked if there were a possibility that this rule might apply to the ocean and all other bodies of water, or perhaps the inversion of the theory could be applied to mountains since they could be considered the geographic

opposite of valleys. He kept temperature readings of how cold the water in Walden was as compared to other ponds; but his interest in atmospheric temperature readings was minimal, especially when compared to Jefferson's. Thoreau instead collected incredible details about ice and ice crystals whenever the pond froze over -- down to the measurements of the crystals themselves and of the bubbles trapped below the frozen surface.[46]

Nature's actions were not incomprehensible; rather they were observable, sensible, and repetitious. And nature invited man to scrutinize its every feature. Though man could never learn completely the processes of the natural world, he could strive to follow its examples as closely as possible. Jefferson, too, had believed that there were some aspects of the natural world which could never be explained. Underscoring his priorities, Thoreau said, "What though your friends misinterpret your conduct, if it is right in the sight of God and Nature."[47] It was more desirable for him to be in nature's favor than in his neighbor's.

He stressed that his methods for living life may not be appropriate for everyone, but, for him, solitude was essential to living in the closest possible harmony with nature. He believed that true reform was accomplished with patience and on an individual, not a society-wide, basis. He challenged his followers to live their lives like a Lewis or a Clark--to explore their own unknowns, to reach for their own limits.[48]

This exploration need not be a frenetic one however. He approached his study by saying, "Do not seek so anxiously to be developed, to subject yourself to so many influences to be played upon; it is all dissipation."[49]

Thoreau used Indian nations as examples of a culture that lived in harmony with nature. He believed that the Indian could provide the perfect example for the white man to follow. Although considered uncivilized by most white men, the Indians lived with the closest, purest relationship to nature of any men. They inhabited the natural world; they did not just visit it to take what they wanted, as the white man often did. For his part, Thoreau anxiously assimilated what he could from these people (from information on the medicinal uses for plants to the setting out of peach trees), and he shared his ideas on their cultivation techniques with his readers.[50]

Thoreau questioned how a man could sit still while the earth was rotating around him and was so alive. "Can man do less than get up and shake himself?"[51] Did man have no curiosity to know how the world functioned? Like Jefferson, Thoreau stated a serious concern for the younger men whom he feared were too materialistic to take the time to learn from the landscape. "Why concern ourselves," he asked, "so much about our beans for seed, and not be concerned at all about a new generation of men?"[52] Thoreau did not believe that man was truly disinterested in the natural world; perhaps he just needed a verbal jolt to remind him what nature was capable of.

And he felt that true students of nature should not merely play with or study the natural world, but they should "earnestly live" with nature.[53]

This exultation and desire to emulate and learn from nature was very Romantic in essence, but Thoreau, particularly in the latter half of his life, expressed more characteristically Enlightenment ideas through his interest in learning what nature could teach him in the scientific realm. His distaste early in life for scientists was based on his belief that, as a whole, they had no emotional relationship with nature; theirs was a strictly intellectual approach and, therefore, not an ideal one. He soon found that this was not true in all cases. One did not have to pursue one passion to the exclusion of the other.

His journals were witness to a debate between two styles: the poet and the naturalist. Some scholars argue that, in the latter half of his life, his obsession with accumulating facts suffocated his creativity.[54] In 1852, Emerson criticized Thoreau for going alone on his information-gathering walks, implying that he was becoming too caught up in intellectual processes. Although Thoreau himself often voiced fears that his work would become too factual and lifeless, ultimately he was successful in permitting his collection of practical facts and his descriptions of idealistic natural beauty to coexist.[55] He was able to balance his interest in science with his personal relationship with nature.

Interestingly enough, Thoreau admired the work that various man-made tools, working in conjunction with nature, could accomplish. In particular he praised their precision. He became a surveyor in 1838 when he was just out of university and expressed excitement when he "obtained a levelling instrument and circumferentor combined, and...ascertained the height of the cliff hill--and surveyed other objects."[56] This vocation was a worthwhile one for him and provided a large portion of his lifetime financial support. Yet participating in the profession of surveyor required that he become an agent of a system of property rights that he so frequently criticized. He also spent some time working with his father making pencils; this family business provided a quality product. He seems to have had no problem with the irony of his working in such a job where, in order to produce the item to be sold, the trees he exalted so highly (and so vociferously) had to be cut down. He was also interested in telescopes and supported studies at Harvard in the 1840s which used new scientific apparatus.[57] And he was particularly impressed with the workings of a Lancaster gingham mill that he visited at Clinton, Massachusetts in January of 1851. What wonderful things could be accomplished when man and nature worked together.

Throughout his life, Thoreau enjoyed participating in and absorbing information about scientific processes. In 1847, he was involved in collecting wildlife specimens for study in

Louis Agassiz's lab. Four years later, Charles Darwin's Voyage of the Beagle completely absorbed Thoreau with its detailed descriptions of natural phenomena and its discussion of change in nature. Thoreau took special interest in Darwin's talk of seed dispersal, and this fascination would resurface in his own work "The Succession of Forest Trees." In Darwin, Thoreau found someone who corroborated his beliefs about nature -- that there was growth there; the natural world was not static. Change over time in nature within species was a belief that Jefferson, however, had not supported.

From 1855 on, Thoreau gave noticeably increased attention to his scientific pursuits. Like Jefferson, he was interested in Linnaeus and his system of plant classification. His journals grew rapidly -- descriptions and observations, all with minute details. His work with tree succession, wild fruits, and seeds had a distinct scientific focus. His themes appeared to stress less the economy of man and more the economy of nature. He said that these collected facts were not important to him per se. Rather their value was in what understandings they led to. One could determine more than lifeless facts from studies of the landscape; one could highlight and ascertain how man and nature interacted. This type of study, now known as ecology, had no formal name in Thoreau's time, but he was obviously an early champion of those "reciprocal relations between organisms and their environment."[58]

A reciprocal relationship between man and nature implied some sort of flexibility and, as Darwin had suggested, capacity for growth in the natural world. When Thoreau read Agassiz's Principles of Zoology in 1848, he could not quite support the theories. The work stated that species were static with each being created according to a fixed plan. They could appear and disappear without warning. They did not undergo changes or survive and adapt over the years. Thoreau leaned toward supporting change over time and set out to prove or disprove these theories. His journals eventually housed over 750 written pages with great charts of data in them. In 1860, after reading Darwin's Origin of Species, he formally rejected Agassiz's special creation theory in favor of Darwin's developmental one. The latter gave more power to nature; it allowed for flexibility and rebirth.[59]

Thoreau himself produced some noteworthy natural history pieces. His first work, from 1842, was the Natural History of Massachusetts and used data from botanical research Emerson had acquired. In 1857, he put out the Allegash and East Branch which provided a natural history of the Maine Woods, with appendices listing indigenous trees, animals, plants, etc. In terms of his recording natural phenomena, this work was the most detailed of all his Maine writings. Thoreau's lecture, "The Succession of Forest Trees," (first read in September 1860) was his first real ecological work. This piece is perhaps best known for its anticipation of modern

forestry methods.[60]

In the essay, he discussed not only the composition, cycles, and care of Massachusetts woodlots, but also soil conditions, the strength and nutritional characteristics of various seeds, and numerous methods of dispersal for different types of seeds. This interest stemmed from a lengthy fascination with flowers and trees, including their blooming and growing times, how they were pollinated, and how they endured cold winter temperatures. Thoreau's approach included testing hypotheses, conducting experiments in the field, qualifying and quantifying data, and reaching empirical conclusions. His focus provided extensive information about the area within a half day's walk of his home.[61]

In this discourse, presented to the Middlesex Agricultural Society in Concord, Thoreau stated that different types of woodlots grew from their own specific seeds which were unintentionally planted after having been carried by wind, water, or animals. He had concluded that a particular type of adult tree (whether it be pine or oak) depleted the soil of nutrients needed for like saplings to prosper, but it seemed to produce ideal conditions for the other type of young trees. Also, he believed that the wind carried the lighter weight pine seeds into hard wood stands; and squirrels, birds, and other animals carried the heavier oak and walnut seeds into the pine woods.[62] This was how the rotation was assured. He suggested that man's best planting results came when he

followed the same guidelines nature itself used--for example, as to the ideal seed depth and atmospheric conditions needed for growth.[63] His written work underscored his beliefs in the importance of careful, considerate forest and land management. In ironic juxtaposition to his belief in nature's unpredictability and vitality, "Succession" sees these woodlots alternating their growth in an incredibly mechanistic and predictable fashion.

Chesuncook (1853) was one of Thoreau's earliest solid statements of support for man's pro-actively working to sustain wildlife and their lands. Thoreau called for the development of national preserves. The narrative showed great interest in primitive lifestyles but also showed his relief to be back to civilization after two weeks in the woods. The work is engaging because it does not find wilderness at odds with civilization. Instead wilderness is presented as an essential, primary component of civilization. Thoreau, like Jefferson, eventually came to support an ideal living and learning environment in which a blend of wilderness and civilization existed.

America's expansive land holdings in the west were an important area where man could still experience wilderness in its purest form. Thoreau did not view the West as important for expansion of civilization alone. Rather its importance was in its symbolism of man's need to know and understand that that is wild within him. This idea, however abbreviated, was

Thoreau's and later became America's conservation ethic.

He observed the natural world and its processes as closely as Jefferson had, prepared charts, and drew comparisons and conclusions--also looking for all-encompassing laws--though not in the same Newtonian sense that Jefferson had. Thoreau believed that these natural facts would, for the right person, become essential spiritual truths. He was concerned that, in the wrong hands, these same laws would lead to excessive manipulation and destruction of the natural world for personal enhancement. Real scientists, Thoreau concluded in his maturity, were not abusers in this way. He said, "The true man of science will know nature better by his finer organization; he will smell, taste, see, hear, feel better then other men. His will be a deeper and finer experience."[64] Just as man often repeated his actions, so did nature; thus there was another point of comparison. Thoreau frequently reviewed his excursion journals to strengthen his analysis of environmental functions and their relation to man. "How vast and profound is the influence of the subtle powers of Heaven and Earth!"[65]

Ultimately, most scientific and observed discoveries, for Thoreau, led back to the idea of nature as a moral model and teacher. If man could only live by the lessons of simplicity and nature's laws, the state of man's mind (and consequently the country's affairs) would be much better.

III. Nature as Friend

Transcendentalists viewed the earth as a living earth, with a thinking mind and a personality. From that belief it followed that nature was capable of forming emotional attachments and developing friendships. Thoreau and other Transcendentalists were, on the whole, more idealistic and interactive concerning their experiences with nature than were the Romantics. True, the Romantics enjoyed the natural world with all of their senses, as did the Transcendentalists. And they revelled in its beauty and in understanding its character, but they were not necessarily striving for a reciprocal relationship. Thoreau, like most Transcendentalists, was interested in a meaningful association with nature, but his view of nature was less general and more pragmatic than that of many other of his contemporaries -- like Wordsworth and Emerson, for example. And Thoreau, even in his youth, never gave himself with such reckless abandon to instinctual visions as European Romantics often did.[66] For Thoreau, the people best able to realize true nature were the Indians, who **inhabited** nature rather than simply visiting; poets, who shared an unusual and distinctive relationship with the land; and eventually scientists, who truly studied the natural world.

Thoreau's studies focused on the interrelatedness of all

life forms, encouraging man to look for divinity in the land and treat the natural world with respect. He concentrated on extensive observation of animals and established an intimate relationship with them and their environment. For example, he watched the loons on Walden Pond, the squirrels in the woods, and birds of all kinds wherever they were. He said, "I am struck with the pleasing friendships and unanimities of nature in the woods--as when the moss on the trees takes the form of their leaves."[67] The idea of God in nature he had learned from Emerson. The existence of this divinity could obviously not be scientifically proven, so the Transcendentalists suggested it by using a non-analytical, non-intellectual approach--that of the power of one's imagination and the use of the senses. By this means, Thoreau felt, man could ascertain the oneness of man, the natural world, and the divine.

Thoreau's perfect vision of an interactive nature portrayed it as beneficent and pure, providing for those dependent on it but not exploiting them. Nature set an excellent example for men as it recovered from damage inflicted upon it without seeking revenge; it was continually renewed with each day and year and greeted each acquaintance with casual optimism -- much like a child. The land had a personality just like a human and any relationship with the natural world was an reciprocal one.

Thoreau's belief in this connection, then, made it all

the more important that man behave fairly and gently toward nature and its inhabitants. Thoreau was optimistic that boys, provided they matured into respectable human beings, could outgrow the desire to hunt for sport. He himself took care not to injure any living creature and recalled that once when he threw a rock at a chestnut tree to induce its nuts to fall, he had felt the same as if he had hit a sentient being.[68] In his "Brute Neighbors" section of Walden, he asked if those people who were familiar with the uses of whalebone or whale oil can be said to know the whale's true use. Can an elephant hunter be said to really know the elephant? He said that these claims and experiences were petty and did not qualify one as an animal expert. Thoreau asserted: "There is a higher law affecting our relation to pines as well as to men. A pine cut down, a dead pine, is no more a pine than a dead human carcass is a man."[69] He thought "...everything may serve a lower as well as a higher use. Every creature is better alive than dead, men and moose, and pine trees, and he who understands it aright will rather preserve life than destroy it."[70] (However, Thoreau never verbalized that he understood the irony of his call for protection of living nature and his family's own practice of cutting trees to make the pencils that they produced.)

Meaningful experiences in the midst of the natural world proved to Thoreau that nature was full of sublime sights and exercises to be enjoyed. These encounters were frequently

medicinal. Man must converse with the natural world to guarantee the same type of mental and spiritual health that one pursued for one's body through physical exercise; and if man adapted his life to the earth's functioning, he need not fear nature, but instead would "find her his constant nurse and friend--as do plants and quadrupeds."[71] Thoreau provided an example of the peace felt in nature by saying that when the sun had set and one was alone in nature, that person would feel at home and quite comfortable there. He certainly was: "I am as contented as though I had been born and brought up here...."[72] Perhaps not every person was as interested in working as hard on a relationship with nature as Thoreau was, but he proclaimed that each man, whether he knew it or not, needed the "tonic of the wilderness."[73]

He enthusiastically supported people's beneficent exploration and enjoyment of nature. Unfortunately, that gentle approach was not always the reality. He suggested that most visitors viewed the earth with "base or coarse" motives -- meaning that they had no love for and no relationship with the land. He protested: "For one that comes with a pencil to sketch or sing, a thousand come with an axe or rifle. What a coarse and imperfect use [humans] make of Nature!"[74] Heaven existed here in their midst if they only knew how to relate responsibly and to discover the existing wonders of creation.

Nondestructive explorations onto the land and, for sturdy individuals, into the wilderness, could save city people from

stagnation and provided everyone with the sights, smells, and emotions needed for a vibrant life. It was a gift from God just to be able to walk; so excursions should be considered as an end in themselves, not just for health purposes.[75] Jefferson had a similar philosophy about walks. The enjoyment of participating in the serenity of nature lifted away the weight of most problems. All one had to do was be open to and desirous of a connection with the natural world and it would be presented. Thoreau recalled:

> Yet I experienced sometimes that the most sweet and tender, the most innocent and encouraging society may be found in any natural object, even for the poor misanthrope and most melancholy man. There can be no very black melancholy to him who lives in the midst of nature and has his senses still.[76]

Thoreau drew great strength from his association with nature. He recalled once having a sparrow rest on his shoulder while he was working in the garden and said he felt more honored by that than by any medal man could have awarded him.[77] He expressed pleasure about his partnership with the natural world:

> I feel slightly complimented when nature condescends to make use of me without my knowledge--as when I help scatter her seeds in my walk--or carry burrs and cockles on my clothes from field to field--I feel as though I had done something for the commonweal, and were entitled to board and lodging.[78]

Perhaps his most publicized connection to the land was his growing beans in a field during his Walden years. He claimed participating in this process attached him to the earth physically as well as mentally. Yet it also provides another

example of paradox in his work since he frequently criticised land cultivation for profit.

Many of Thoreau's contemporaries thought him selfish and stupid for withdrawing from society for this study at Walden; his extensive immersion in nature was viewed (and perhaps with some validity) by some as a weak refusal to face responsibilities other men accepted. His reason for maintaining some distance from the hoards of people clustered in the cities was to be able to foster and cultivate an intimate, uninterrupted relationship with nature. To do this, he claimed that he must disregard the worldly activities which consumed so much of most men's time. He feared that uncontrolled technological growth and the resulting subjugation of man and nature could be harmful to man's inner health and, eventually, to his ability to interact with nature. He seemed to be aware of the potential dangers of man's quest for position and power and was, therefore, wary of encouraging too much progress, too quickly -- much as Jefferson had been. Society, however, always remained an important part of his life. His withdrawal from society was never a total one at any time in his life, even when he was at Walden. (Walden Pond was just a short distance from his family home. The importance of the trip was symbolic -- a statement of freedom and self reliance; he remained in sight of civilization.)

Finding and participating in nature's eminent beauty and

processes were Thoreau's ultimate goals. He was concerned about and strove for a level of perception that penetrated below the visible surface of the land. He had learned from his mentor Emerson that there was an inner and eternal beauty to be perceived in nature. One's past experiences strongly influenced that individual perception. Thoreau believed that the realization of beauty in nature was a sign of a purified observer and a redeemed landscape -- and was again based on one's past experiences.

For Thoreau, nature's art work was always preferable to man's. Man and his creations were frequently clumsy when compared to nature's. Thoreau told of seeing fallen pine trees and "it seemed as if man could not lay his tree gracefully along the earth as the wind does, but my eye as well as the squirrel's would detect it."[79] He spoke with reverence of America's woods and fields and suggested that human attempts to imitate the forms of the wilderness -- as, for example, in the garden form that Jefferson so admired -- were often quite worthless because they fell so far short of the original.

Nature was wonderfully capable of altering its patterns and aspects to create peaceful and enchanting visions. He found the Amberjijis lake to be the most beautiful he had seen -- very deep and boasting beautiful views of the surrounding mountains; and he adored the handsome purple orchises "rising ever and anon, with their great purple spikes perfectly erect,

amid the shrubs and grasses of the shore."[80] Another time, during one of Thoreau's walks with friends, he said "...we began to realize the extent of the view, and how the earth, in some degree, answered to the heavens in breadth....We could see how ample and roomy is nature."[81] This openness in nature provided a refreshing alternative to the cramped, stifled cities.

Combined with his desire to increase respect for the land and its workings, Thoreau demanded foresight in making decisions and pursuing alternative ways of relating to the land so that its aesthetic paradise could be preserved. This was especially vital to him at a time when industry and manufacturing were continuing to increase in importance. Both Thoreau and Emerson rejected offers to join communal societies, although they were sympathetic in theory to the goals of the groups. Personal reform was all important when it came to a relationship with nature, and they feared that the strict structure and daily routines within the communes would stifle this reform. Walden was Thoreau's response to communes, providing an example of reform based on the self.

He called for wilderness preservation and public ownership of parks for his countrymen to maintain and explore. Thoreau wanted everyone to have the chance to experience nature's awesome beauty. In Thoreau's mind, the most striking aspect of the Maine wilderness was the continuousness of its forest. This immenseness, he believed, should be sustained.

He questioned: "Why should not we...have our natural preserves where no villages need be destroyed, in which the bear and panther, and some even of the hunter race, may still exist, and not be 'civilized off the face of the earth'?"[82] Can our forests hold game not for idle sport or food, "but for inspiration and our own true recreation? Or shall we; like the villains, grub them all up, poaching on our national domains?"[83]

In 1845, the National Reform Association made a proposal to keep land in the hands of small farmers. Thoreau supported these reforms and the premise of small farmers' needs taking precedence over large farming "businesses" -- just as Jefferson had.[84] Quite understandably, the symbol of freedom and unspoiled beauty in this quest for the preservation of nature became the great open western lands.

So, although Thoreau believed strongly in ideas that are traditionally Romantic and Transcendental in essence, such as a reverence for nature and the possibility for reciprocal relationships, he also advocated thorough and rational scientific study of the natural world -- which many of his contemporaries did not. Thoreau's focus shifted as he matured from being somewhat abstract and idealistic to being more concrete and practical. Indeed, his focus in the final years of his life was almost exclusively the scientific study and understanding of the workings of Concord's forests. Thoreau

did not make a distinction between being a "poet" or a "naturalist"; he believed that to study nature and to know oneself were, in the end, the same thing.[85] For Thoreau, intense study of nature was ultimately another way of interacting with the subject. Each additional discovery brought the observer closer still to understanding nature and, at the same time, could also provide one with emotional and spiritual fulfillment. Thoreau's primary goals, then, whether alone at Walden or elsewhere, were the comprehension and enjoyment of the beauty and functions of the natural world and a collaboration with its many elements.

Notes on Chapter II

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2. David Shi, The Simple Life, (New York: Oxford University Press, 1985), p. 141.

3. Robert Richardson, Henry Thoreau: A Life of the Mind, (Berkeley, Calif.: University of California Press), pp. 15-18.

4. Joan Burbick, Thoreau's Alternative History: Changing Perspectives on Nature, Culture, and Language (Philadelphia: University of Pennsylvania Press, 1987), p. 2.

5. Henry Thoreau, "Walking," in Excursions, ed. Leo Marx (New York: Corinth Books, 1962), p. 179.

6. From Thoreau's lecture, "Huckleberries," cited in Burbick, Thoreau's Alternative History, p. 31, and Donald Worster, Nature's Economy (Cambridge, New York: Cambridge University Press, 1985), p. 75.

7. Henry Thoreau, Walden, and On the Duty of Civil Disobedience (New York: Harper and Row, 1965), p. 5.

8. Ibid, p. 10.

9. Henry Thoreau, The Writings of Henry David Thoreau, ed. H. G. O. Blake (Boston: Houghton-Mifflin Co., 1906), from Vol. III: Maine Woods, p. 15.

10. Thoreau, Walden, p. 155.

11. Ibid, p. 121.

12. Worster, Nature's Economy, p. 61.

13. Nash, Wilderness, p. 89.

14. Henry Thoreau, "Walking," in Excursions, ed. Leo Marx (New York: Corinth Books, 1962), p. 185.

15. Thoreau, Maine Woods, pp. 54, 88, 171-2.

16. Ibid, pp. 5-6.

17. Thoreau, Walden, p. 218.

18. Ibid, p. 209.

19. Thoreau, Journal I, 29 March 1842, p. 396.

20. Henry Thoreau, The Writings of Henry David Thoreau, ed. John Broderick (Princeton: Princeton University Press, 1981-), in Vol. I: Journal 1837-1844, 10 March 1841, p. 283. (Hereafter referred to as Thoreau, Journal I.)

21. Thoreau, Maine Woods, p. 39-40.

22. Thoreau, Walden, p. 47.

23. Ibid, p. 116.

24. Thoreau, "A Winter Walk," in Excursions, ed. Leo Marx, pp. 77, 84.

25. Thoreau, Walden, p. 186.

26. Ibid, p. 52.

27. Thoreau, Journal I, 10 March 1841, p. 283.

28. Thoreau, Walden, p. 67.

29. Richardson, pp. 13, 29.

30. Walter Harding and Michael Meyer, The New Thoreau Handbook, (New York: New York University Press, 1980), pp. 81, 88-89.

31. Richardson, pp. 21-22.

32. Worster, Nature's Economy, pp. 103, 105-6.

33. Harding and Meyer, pp. 6, 108, 224, 266, 299.

34. Harding and Meyer, p. 94, Richardson, p. 81.

35. Burbick, Thoreau's Alternative History, p. 51.

36. Thoreau, Journal I, 9 Sept 1828, p. 468.

37. Thoreau, Walden, p. 129.

38. Ibid, p. 65.

39. Thoreau, Journal I, 23 Sept 1838, p. 56.

40. Ibid, 24 December 1841, p. 347.

41. Henry Thoreau, "Succession of Forest Trees," in Excursions, ed. Leo Marx, pp. 151-2.

42. Thoreau, Journal I, 21 November 1837, p. 14.

43. Thoreau, Maine Woods, p. 72.

44. Thoreau, Walden, p. 139.

45. Ibid, p. 214.

46. Thoreau, Journal I, 19 December 1837, p. 21; Thoreau, Walden, p. 184.

47. Thoreau, Journal I, 15 July 1838, p. 49.

48. Thoreau, Walden, p. 238.

49. Ibid, p. 243.

50. Thoreau, Maine Woods, p. 259; Thoreau, Journal I, 20 September 1841, p. 333; "The Bean Field," in Thoreau, Walden, pp. 115-125.

51. Thoreau, Journal I, 6 March 1838, pp. 34-35.

52. Thoreau, Walden, p. 122.

53. Ibid, pp. 37-38.

54. Kathryn Whitford, "Thoreau and the Woodlots of Concord," New England Quarterly 23 (Sept 1950), p. 292.

55. Richardson, pp. 247-8.

56. Thoreau, Journal I, 11 November 1840, p. 197.

57. Richardson, pp. 227-8.

58. Whitford, p. 293.

59. Richardson, pp. 364, 383.

60. James McIntosh, Thoreau as a Romantic Naturalist, (Ithaca, New York: Cornell University Press, 1974), pp. 292-3.

61. Henry Thoreau, Faith In a Seed, ed. Bradley Dean (Washington: Island Press, 1993), p. xv.

62. Ibid, p. 24.

63. Ibid, pp. 124, 134.

64. Thoreau, "The Natural History of Massachusetts," in Excursions, ed. Leo Marx, p. 72.

65. Thoreau, Walden, p. 100.

66. Harding and Meyer, p. 97.

67. Thoreau, Journal I, 25 April 1841, p. 303.

68. Henry Thoreau, The Writings of Henry David Thoreau, ed. H. G. O. Blake, Vol. IX, Autumn (Boston: Houghton-Mifflin Co., 1906), 23 October 1855, pp. 144-145.

69. Thoreau, Maine Woods, p. 134.

70. Ibid, pp. 134-135.

71. Thoreau, Journal I, 31 December 1841, p. 353; 7 February 1841, p. 255.

72. Ibid, 15 November 1837, p. 11.

73. Thoreau, Walden, p. 235.

74. Thoreau, Maine Woods, p. 133.

75. Thoreau, "Walking," in Excursions, ed. Leo Marx, p. 163.

76. Thoreau, Walden, p. 97.

77. Ibid, p. 205.

78. Thoreau, Journal I, 6 February 1841, p. 253.

79. Ibid, 15 December 1840, p. 204.

80. Thoreau, Maine Woods, pp. 49, 333.

81. Thoreau, "A Winter Walk," in Excursions, ed. Leo Marx, p. 90.

82. Thoreau, Maine Woods, p. 173.

83. Ibid, p. 173.

84. Richardson, p. 150.

85. Thoreau, Faith, p. xii.

CONCLUSION

This discussion has shown, through examinations of the background, development, and impact of the ideas of Jefferson and Thoreau, that these two scholars shared numerous beliefs about the natural world and one's relation to it. These men, both well-read intellectuals, held interests and opinions too dynamic and too complex to be comprehensively confined within any particular movement. Both men pursued an intense knowledge of nature in much the same way -- by repeated contact. Jefferson, by means of his studies and travels, had possibly been more influenced by the proto-Romantic impulses emerging in the eighteenth century than he was conscious of; and Thoreau studied nature's elements too intimately not to be persuaded eventually to explore the benefits of the precision of scientific methods.

Through their detailed observations and conclusions about the natural world, Jefferson and Thoreau contributed extensively to the field of natural history. Despite coming from different personal and intellectual backgrounds, both men saw nature as a provider, a teacher, and a friend. Both had great respect for the environment, and both believed that man had a obligation not to exploit the land. For them, thoughtful cultivation and sustained interaction with the

natural world created favorable conditions for personal liberation and a distinct, secure republic, as well as for physically healthy and morally sound individuals.

First of all, both Jefferson and Thoreau maintained great faith in the land's potential as a provider. For Jefferson, cultivation was a more expansive term, extending to market and trade practices; whereas, for Thoreau, land cultivation was preferable on a much smaller scale -- for one's personal use. Each man kept meticulously-written accounts of the natural world and his cultivation practices and experimented with different types of plants and new equipment (for example, Jefferson with his moldboard; Thoreau with his speculator's instruments).

They believed that productive and responsible use of the land helped create and maintain an ideal living environment. Consequently, they preferred an agrarian-based economy to a manufacture- or trade-based one (although each man in his maturity expressed interest in or an understanding of the need to participate in manufacturing). They did not oppose controlled progress, but both feared that land development was quickly surpassing levels that they considered controllable and, therefore, healthy. Jefferson followed the Enlightenment belief in unlimited resources which could be developed in an attempt to perfect and control nature and enhance man's position. He had faith that man's reason would ultimately triumph to limit production, development, industry and

exploitation. Thoreau was not as confident as Jefferson that man could rationally limit his production and preserve nature's sanctity; he had witnessed technological developments followed by man's response--that of increased manufacturing and the resultant environmental destruction. He did not criticize all resource production, just the overproduction and wasteful abuses of the land.

Both Jefferson and Thoreau supported the rights of small land holders struggling for a position against the larger plantation owners. But while Jefferson considered it a natural **right** to own and work the land, Thoreau felt more strongly that man had to earn his right to maintain that **privilege**. For them, regardless of an individual's wealth, a type of social contract existed between man and the land. Jefferson's belief in one's right to own land did not prevent him from maintaining, as did Thoreau, that individuals had a responsibility to improve their holdings to the best of their ability and without abusing the land or they should lose their right to own the land.

Both men agreed that wilderness areas were an inherent and, therefore, important part of the landscape. And both men praised the doctrine of living simply. (In both of these cases, Thoreau's advocacy was more pronounced than Jefferson's, although Jefferson - particularly in his later years - did live more simply than most other members of his social class). Both men were a bit wary of the potential for

human corruption in the cities and, thus, desired a personal balance of culture or civilisation and wilderness interaction. Jefferson was more interested in formalized cultivation of garden areas than was Thoreau; however, Jefferson's preference in landscape design ran to the more simple and natural layouts. Thoreau took this interest in a natural looking landscape design one step further by suggesting that man not tamper with nature's patterns at all; they were quite beautiful enough already. Furthermore, Jefferson and Thoreau maintained that individuals had much to learn from nature. They themselves were very interested in studying nature and collecting information -- in particular, for the purpose of determining how natural processes could pertain to one's life. On a practical level, they hoped that their written accounts - detailing both their failures and successes - could be of benefit in the education of future generations of cultivators. Their studies never ceased; even when they were travelling, they continued to collect information and refine their theories. Each engaged in travels; but, although each journey presented some new and intriguing information on the natural world, each journey also made them more appreciative of the existence and unique features of their own region. Both men wrote natural histories of their geographic areas and both were intensely fascinated with the potential of the Western lands.

They both believed in the perfection of nature and in the

existence of natural laws. Knowledge of these laws could help focus one's moral decisions, and individuals could follow nature's guidelines to live a fuller life. Nature was meant to be experienced; the ideal was to establish a significant relationship with the land. Both men attempted to exercise some control over nature (whether through growing crops for market and developing ornamental gardens or through growing beans and producing pencils), but each realized that a complete understanding of all of nature's functions was beyond their ability to comprehend. The study of and associations with nature strengthened the mind and body and could lead to a healthier, more prosperous life.

Finally, Jefferson and Thoreau received immense aesthetic enjoyment from their connections to the natural world. They valued their time spent in nature. Their pleasure in the growth and prosperity of nature was closely related to their scientific interests. Thoreau stated more precisely than Jefferson the idea of the inter-relatedness of all life forms, and, based on that connection, believed mankind must accept the pressing obligation to use the land fairly and wisely. The idea of man's responsibility toward the environment was a common one to both men. Jefferson was something of a moral agrarian and, as witnessed by his concern for fertilizing soil to prevent mineral depletion and for taking steps to decrease observable soil erosion, also held some concern for sustaining the land. Each believed that care must be taken not to over

cultivate or mistreat the land; there was a land ethic involved in land ownership. Both men favored the idea that certain properties should be held in public trust. They wanted to ensure that the future generations of people from all levels of society would have the opportunity to experience natural beauty as former generations had.

Their written accounts, whether done while at home or while travelling, usually portrayed nature in a positive and beneficent light, but other times their descriptions go beyond this. Each man delighted in his own sense of the sublime - of sights that took his breath away with their awesome beauty or their wildness. These types of visions further underscored their conviction that man did not control nature, but was only a small part of the whole. Both men expressed concern about their ability to describe verbally certain profound and emotion-provoking scenes. Each man treasured his relationship with the land and took great pleasure in the beauty and pureness of the world around him. Following in the footsteps of the Romantic principle of personification of the land, Thoreau attempted to foster a friendship with the natural world--an act which signified a reciprocal and equal relationship, not just an deep affection for her. Each man was successful in permitting his scientific and his poetic interests toward the natural world to mature without the existence of one obstructing the development of the other.

In spite of their different backgrounds, both Jefferson

and Thoreau had great regard for the environment, and both believed that individuals had a responsibility to observe and experience the natural world and to keep it safe from exploitation and deterioration. During the latter portion of the nineteenth century, conservationists found features of their developing movement in the convictions and actions of these two men; the legacies of Jefferson and Thoreau are discernible even today. In his time, Jefferson was confident that with the incredible amount of virgin land in America and with human reason and self-control, individuals could fulfil their obligations to responsible land use and land enjoyment. A half century later, following substantial technological developments, increased manufacturing and material demands, and visible environmental exploitation, Thoreau had less reason to be so optimistic. For them, interaction with nature was not only the ends, it was also the means--providing a model to the realization of truth, contemplation of what was good, and to a life of virtue, freedom, and health.[1]

Notes for Conclusion

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VITA

Stephanie Brewer Foley

Born in Ithaca, New York, March 19, 1966. Graduated as valedictorian from Travelers Rest High School in Travelers Rest, South Carolina, June 1984; B. A., History, Furman University, Greenville, South Carolina, 1988.

In June 1988, the author entered the College of William and Mary as a Museum Management Intern and a master's candidate in the Department of History.